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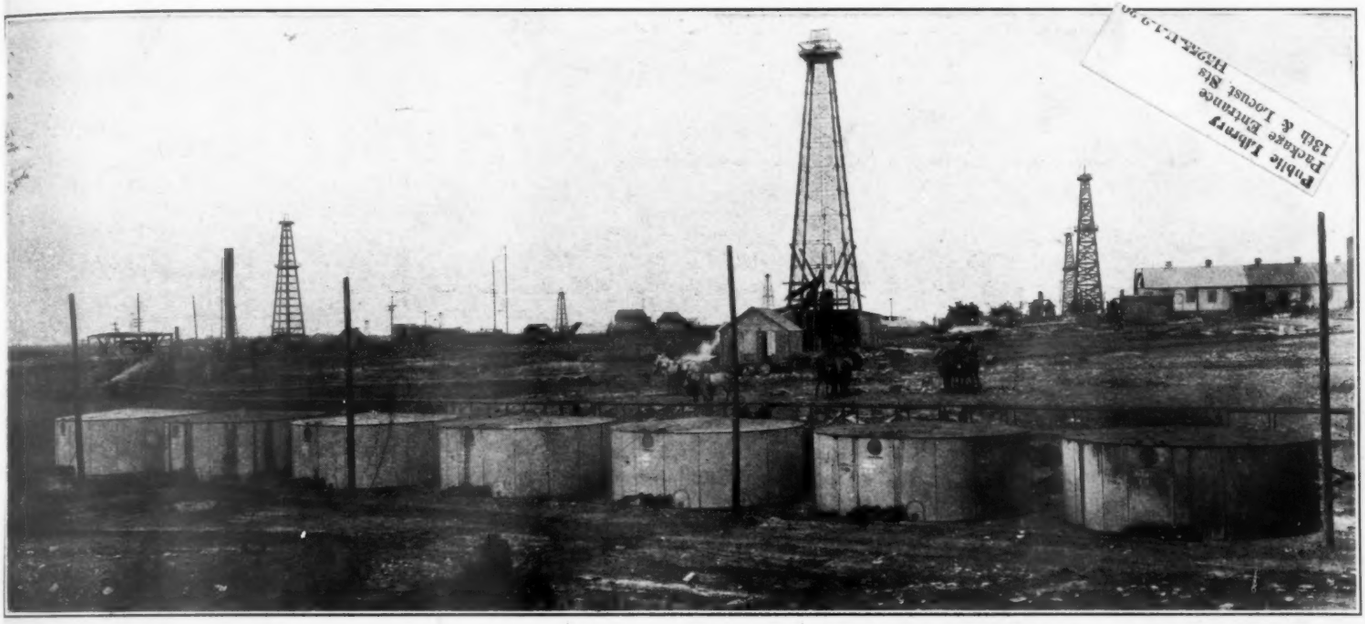

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The seven 500-bbl. tanks shown above—newly erected by distributor, Maloney Sales Corporation, for T. B. Slick on the Linn Farm, at St. Louis, Okla.,—have a remarkably long future before them because they are MALONEYS. Rust-resisting Keystone Copper Steel gives MALONEY Tanks exceptional *durability*. Our methods of construction, with heavy gauge sheets, rigid steel channels reinforcing seams, adequate deck supports, and special bolts of 90,000 pounds tensile strength, give MALONEY Tanks *strength* to withstand the strains of long service.

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MADE OF KEYSTONE COPPER STEEL

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Sizes: 12 to 10,000 Barrels

Packed in Steel-Bound Crates for Export

MALONEY

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

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DU PONT ANNOUNCES

a paint made especially for the petroleum industry— "general purpose" in scope

Petro Paint is highly resistant to sulphur fumes—adapted for systems for all types of surfaces

THE petroleum industry has maintenance battles to fight unknown in any other field. On leasehold property, tanks, refineries, pumping stations—for a host of uses in transportation and marketing equipment, ordinary paints cannot stand the gaff. They blacken—become unsightly—everywhere soon deteriorate.

Now du Pont offers a line of paints scientifically made to solve just these problems—to meet economically your special requirements in beautifying and preserving your property. Petro Paint is a "special purpose" finish of wide adaptability in your industry—not only for wood, but for systems applicable to metal, plaster, concrete—to all types of surfaces.

Du Pont chemists develop remarkable new formula

Paints based on white lead blacken rapidly under sulphur fumes. Lithophone used alone fails by excessive chalking and mildewing. Zinc oxide used alone causes cracking. Eventually, after extensive experiment, du Pont scientists decided on the prime pigment portion of Petro Paint: lithophone, zinc oxide and titanium oxide pigment. Inert pigment was added to give greater durability. Field and laboratory tests determined the proportions to bring out the most desirable features of each element.

A fundamental study of driers was made. A vehicle was developed which overcame many difficulties hitherto unsolved. Ease of brushing was attained. Petro Paint sets a completely new standard for beauty, efficiency and economy.

7 reasons why Petro Paint solves your problems

Consider these characteristics of Petro Paint as applied to your own specific painting problems:

1. Petro Paint is highly resistant to sulphur fumes and aqueous vapors.
2. It is adapted for systems designed for all types of surfaces.
3. On tanks it curtails evaporation. It has the remarkable quality of retaining its original brilliance and cleanliness for a long period of time without fading.
4. It has greater durability under any conditions.
5. It leaves a good surface for repainting
6. It can be applied under adverse temperature conditions. It does not crawl on col surfaces.
7. It hides better than other mixed paint —is very economical.

Petro Paint gives you an opportunity to us *color* effectively wherever you wish.

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XUM

Production Trend Continues Upward

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

California, Oklahoma and West Texas Factors in Situation While Output Is Considerably in Excess of Needs

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

Little relief is in sight for the upward trend of the crude oil production curve for the United States. After breaking all previous records for daily average production over a period of a week, the output of all the fields of this country again increased during the past week with developments in the different areas indicating this condition will obtain for some time to come. California, Oklahoma and West Texas are the big factors in the situation and there is little doubt production from these areas will register gains during the next couple of months or so.

The Santa Fe Springs Field in California is mainly responsible for continued increases being shown in production from that State but recent new discoveries, including Lawndale and Elwood, have potentialities which must be kept in mind in considering the outlook for this year. In Oklahoma, the Mission Pool is expected to be opened February 15 when wells drilled to the productive horizon will be opened for production under the present agreement in effect. The west side of the Maud Pool, also in Oklahoma, looks promising for Wilcox sand production while the Allen Pool in Oklahoma is being watched especially carefully as a result of recent showings which may indicate Wilcox sand production there also. Some close observers believe the Sedgwick County Pool in Kansas may produce from 40,000 to 50,000 barrels a day when fully developed.

Permitted production in the Yates Pool in West Texas have been increased to 100,000 barrels daily with a production of 87,500 barrels daily expected soon.

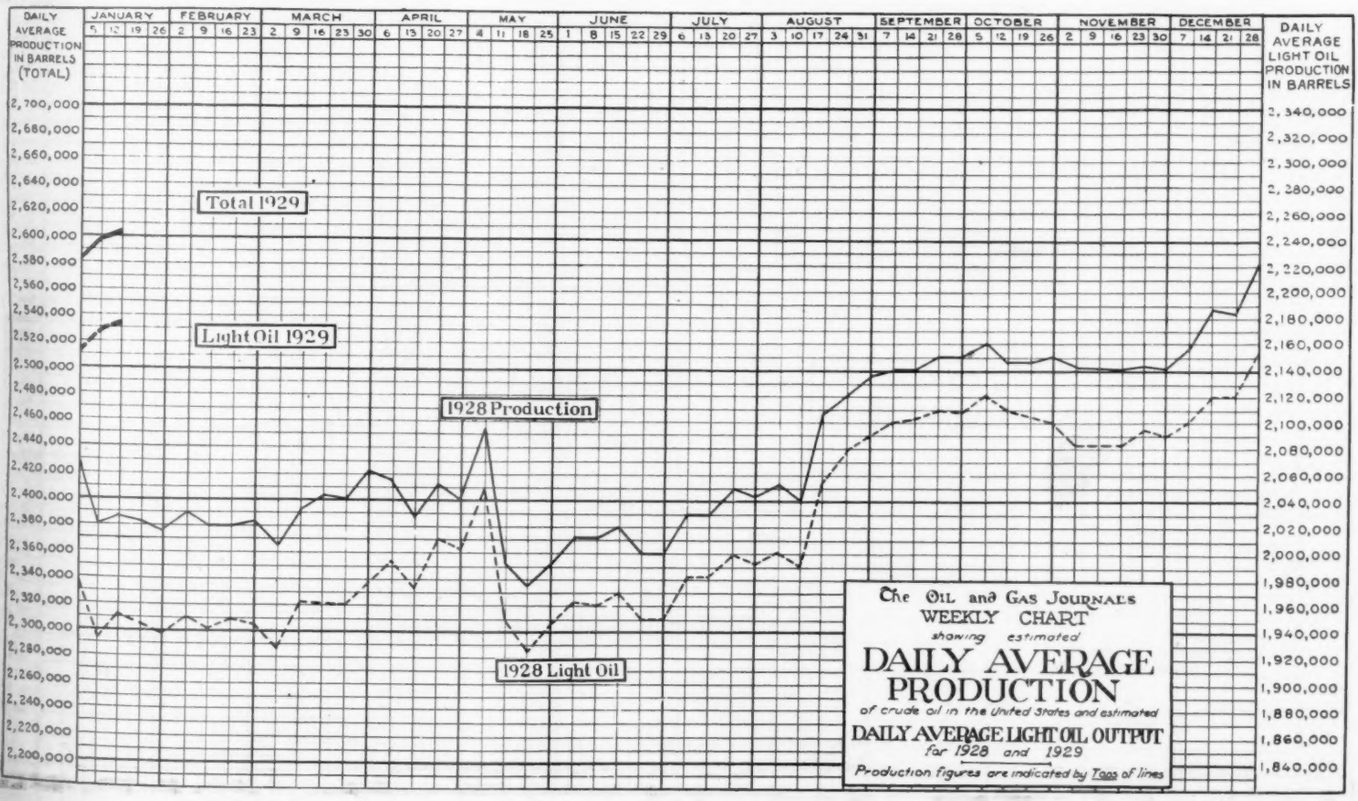
Consumption of petroleum and its products during 1929 can be gauged fairly accurately so the entire industry is well aware present production is entirely too great for requirements, especially in view of the enormous quantities of crude oil in storage. And, as stated before, the present trend of production is upward.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended January 12, and a comparison with the previous week follows:

	Jan. 12		Jan. 5	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	11,270		11,430	
Burbank	24,220		24,270	
Other Osage Fields	26,435		26,245	
St. Louis-Pearson	133,815		137,905	
Cushing and Shamrock	20,920		20,985	
Bristow	19,465		19,560	
Allen	26,485		27,735	
Seminole	279,715		277,890	
Northern Miscellaneous	116,985		114,630	
Southern Fields	58,810		58,770	
Total Oklahoma	718,120		719,420	
West Texas—				
Hendricks	166,045		160,663	
Yates	73,228		73,106	
Remainder	119,731		119,504	
Total West Texas	359,004		353,273	
North Louisiana	30,635	6,020	30,390	6,020
Arkansas	27,275	51,885	28,195	51,990
North Central Texas	138,891		140,865	
Texas Panhandle	58,595		58,605	
East Central Texas	22,150		21,977	
Kansas	97,240		97,135	
Total Mid-Continent Area	1,451,910	57,905	1,449,860	58,010
Gulf Coast		137,902		138,265
Southwest Texas		45,953		42,304
Eastern	114,000		115,000	
Rocky Mountain Area	73,192		78,102	
California—				
Santa Fe Springs	132,000		120,500	
Long Beach	182,500		182,000	
Torrance	2,000	13,500	2,000	13,500
Huntington Beach	48,500		50,000	
Elwood	14,500		14,750	
Inglewood	16,000	11,000	16,500	11,500
Ventura Avenue	49,500		50,500	
Seal Beach	28,500		29,000	
Remainder of State	60,000	166,000	61,000	167,000
Total California	533,500	190,500	526,250	192,000
Total United States	2,172,602	432,260	2,169,212	430,579
Grand Total		2,604,862		2,599,791

→ **Total Increase, 5,071 Bbls.; Light Oil Increase, 3,390 Bbls.** ←



Greater Buying in Oklahoma Market

Export and Domestic Purchases Stop Price Decline in Refinery Gasolines and Natural Gasolines. Kerosene Also More Active

By C. O. Willson

Export buying of the higher gravity gasolines with greater activity in the domestic market for the same grades was the encouraging development of the past week for refiners in the Oklahoma (Group 3) refined market. More buying of natural gasoline also was apparent and prices advanced the first of the week after a period of several weeks during which there had been steady decline in quotations.

Among the remaining products, kerosene prices also stiffened in response to increased business, the bulk of which was placed with refiners in adjoining refining centers which compete directly with the Oklahoma refiners. Low cold test fuels, including distillates and gas oils, continue to maintain a strong position with slight advances in quotations by several companies. Lubricating oils and wax prices were steady during the week.

The development in refinery gasoline and natural gasoline market apparently represented an effort on the part of refiners and manufacturers to stabilize their market at present levels which are from 3 to 5 cents a gallon under the peak of last summer and fall. In the refinery end two export companies placed additional business with Oklahoma, Kansas and North Texas refiners, the operators in the latter area obtaining the bulk of the business. Some spot purchases for export were reported but the greater part of the sales are based on contracts which will extend through the next 90 days.

It is estimated that the contracts already closed between refiners and exporters assure that approximately 12,000,000 gallons will be moved during the next 60 to 90 days. The contracts are for 375 endpoint material and are based on the export market for the same grade at the Gulf Coast, the refiner obtaining 2 cents under the coastal price on date of shipment. The shipments made during the past week were on basis of 7.75 cents a gallon North Texas and 7.65 cents for Oklahoma and Kansas shipments.

Low Export Prices

These prices are approximately 1 cent under the accepted domestic market for the same grade. The situation is brought about due to the break in the Gulf Coast export market of two weeks ago. Refiners who have these contracts take the position that Oklahoma and Mid-Continent refiners will have a surplus over domestic requirements and available storage facilities during the next 90 days at least, and it is better to dispose of this surplus through export channels at low prices than attempt to force additional supplies on the jobbing trade.

The reductions in coastal prices indicate that the large refiners located in those areas also have surplus gasoline which they wish to move to export buyers. This competition between interior and coastal refiners for foreign business may prove to be the dominating factor in the gasoline market until the summer domestic demand gets under way. Although sales to exporters will give the domestic market temporary relief, past experience has shown that the export and domestic gasoline markets are too closely related for one to profit at the expense of the other over any long period. Thus the low export prices, if they continue, will constitute an additional menace to the domestic market.

Natural Gasoline Active

The development in the natural gasoline market during the past week was similar to that in the high gravity refinery gasolines. Prices previously had dropped to the point where refiners and blenders could use additional quantities profitably in their current sales. At the same time there are other buyers who are willing to purchase for storage purposes.

At least three companies who are large manufacturers of natural gasoline were buying from other manufacturers during the past week. On Monday and Tuesday they were offering to purchase Grade AA at 5½ cents, the price level established for that grade on Saturday.

These buyers were moving their purchases to their regular customers. In the case of one buyer the gasoline is being purchased for export after the gasoline has been stabilized and meets the foreign requirements in regard to specifications.

Storage of Gasoline

The storage of gasoline has become a factor in both the refinery gasoline and natural gasoline market. For instance one refinery owner has set 8 cents as a minimum price for spot business for

(Continued on Page 138)

REFINED MARKET BAROMETER

Local developments featured the refinery markets in United States. Continued weakness in gasoline was reported from several refining areas, but in the Mid-Continent buying was more active and prices were fairly steady for the first time in several weeks. Natural gasoline in the Mid-Continent responded to more buying with slightly higher prices the first of the week. The California market on both refinery gasolines and natural gasolines is weak. No changes were reported in kerosenes except in some areas of the Mid-Continent where buying was more active. Fuel oil and gas oil prices were practically unchanged. The steady advance in eastern cylinder stocks ended and reductions from the peak prices of last week became effective on some grades. Wax prices were steady.

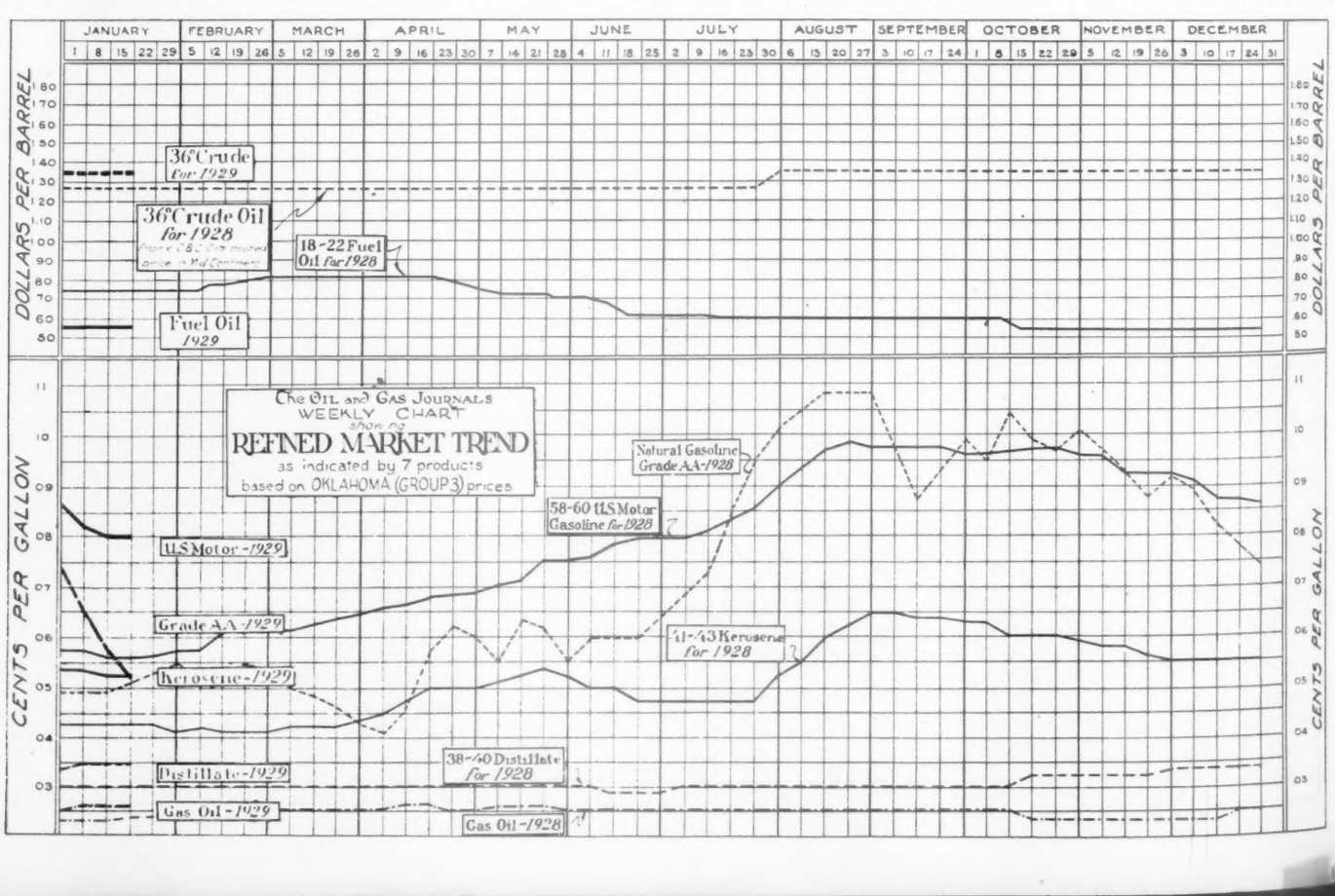
Mid-Continent—Natural gasoline advanced in all areas from one-eighth to one-fourth cent. Export prices on high gravity gasolines lower. Few changes in domestic gasoline prices. Better grades of fuel oils, gas oils and furnace distillates strong. North Texas, Oklahoma and Kansas kerosene stronger. No change in lubricating oils and wax.

East Coast—Price war in New York City disturbs gasoline market, but prices at refineries continue firm. Demand for fuel oil steady. Wax market quiet. Some grades of cylinder stocks reduced.

Chicago—Weather conditions reduce gasoline demand and refinery market weak. Heavy movement of furnace oils. Gas oils strong. Stronger tone in kerosene.

California—Standard Oil Co. of California reduced fuel oil at Los Angeles and San Francisco 15 cents a barrel. Reductions had been made previously by many companies. Export gasoline prices lower. Natural gasolines higher.

Gulf Coast—Gasoline movement slow. Strong demand for steam refined cylinder stocks and bright stocks, but prices unchanged. Good movement of fuel oil.



Gas Men Criticize Open-Flow Gauging

Use of Back Pressure on the Sand Should Be Substituted, According to Views Expressed at Convention of Southwest Division

By J. L. Dwyer

SHREVEPORT, La., Jan. 15.—Two outstanding suggestions regarding natural gas were advanced at the annual convention of the Southwest Division of the Natural Gas Department of the American Gas Association, which opened here yesterday and closed this afternoon. These suggestions were:

First. The consuming public should be familiarized thoroughly with the heat value of gas and should have a perfect understanding of B.t.u. content instead of regarding it merely as 1 cubic foot.

Second. It seems desirable to have a change from the open-flow method of gauging gas well capacity to gauging by use of back pressure on the sand.

These suggestions were the subject of favorable discussion in yesterday's sessions. Three hundred gas men were here to receive the benefit of papers and discussions relative to many phases of production, transmission and distribution of natural gas.

Frank L. Chase, of Dallas, Tex., vice president of the Lone Star Gas Co., presided at the opening session yesterday morning. An invocation by Rev. James Owen, of Shreveport, was followed by an address of welcome by Mayor L. E. Thomas, of Shreveport, who stressed the industrial growth of this city and said this growth was directly attributable to the advantages of natural gas for fuel purposes which it enjoyed.

Telegrams expressing their inability to be present were received from Colonel Fogg, Sam W. Meals, H. C. Morris and Arch W. Leonard, and these messages were read.

Pioneer Spirit Praised

In the first paper presented to the convention, "A Word from the American Gas Association," Maj. Alexander Forward, of New York, managing director of the association, brought greetings from that organization's directors and officers. He lauded the pioneer spirit and enterprise which characterized natural gas development, saying that while gas has made no pyrotechnic display of gain it has shown steady increase. It was forging ahead and now stood ahead of all other fuels. The sale of natural gas for fuel purposes last year had increased 3½ per cent, constituting the greatest proportionate gain of any fuel.

Major Forward especially commended the important research work which the industry is carrying on in the field and in commercial lines. He mentioned the progress made in accounting work, which has been a source of great benefit; research done in examination and development of suitable pipe line coverings and similar work on pipe joints with the object of eliminating losses through leakage. During the coming year, he said, much would be done in the study of mixed gases.

H. E. Meade, of Public Service, Inc., New Orleans, read a paper on "Development of Sales of Industrial Gas and the Rate Necessary to Obtain the Business," in which he discussed certain fundamentals tried and found suitable in New Orleans. The paper contained many excellent ideas concerning laying out details for proposed mains and systems and it paid particular attention to methods of conducting a survey of new markets for industrial gas.

Gas Compared with Other Fuels

Mr. Meade gave detailed descriptions of various fuel-burning equipment and the experiences his company had met in effecting a change of this machinery from artificial to natural gas consumption. He made several comparisons of gas with other fuels in the matter of maintenance cost of equipment and gave details of customers' costs, including all phases of gas distribution, relating his company's experience in development of the industrial market. He stated that special rates were made to industries based upon conditions peculiar to that industry rather than upon the amount of gas consumed. He emphasized the fact that his company believed calorific comparisons do not always tell the complete tale in fuel problems, but several side lines, principally maintenance cost of equipment are of major importance to industrial consumers.

Discussion of the Meade paper was led by H. L. Montgomery of the Cities Service Gas Co., Bartlesville, Okla., who said the rate situation brought about many changes and improvements due to direct analysis and that his company had experienced the development of industrial business through rates designed for special conditions necessitated by industrial consumers.

Chairman Chase remarked priority of service rather than individual conditions should govern the matter of establishing difference of rates and said his company now had five separate rates for industrial consumers, all based upon priority. The lowest rate was made on a contract which permits the Lone Star company to cut off the consumer any time while the highest rate provides for 24-hour service. He said gas should be put on the basis of a competitive fuel and advocated making of contracts which permit gas prices to follow any revision in prices of competing fuels. Mr. Chase said the future of natural gas holds excellent prospects of selling on a B.t.u. basis instead of on the ordinary method of metering now in vogue.

Julius M. Naiman of the Southern Natural Gas Corp., Birmingham, Ala., gave some novel conditions his concern encountered in pioneering the natural gas field in Alabama and gave an idea of rate troubles in connection with the proposed line from Monroe to Birmingham. Cheap coal proved the greatest difficulty in making industrial contracts on this line, he said, and this necessitated heavy selling and an educational campaign before industries were willing to turn from coal to gas. A complete industrial survey was made over the route of the proposed line and manufacturers were convinced of the superiority of gas through different efficiency tests, ultimate manufacturing cost and improved finished products made with gas as fuel instead of coal. Mr. Naiman said in making an analysis of the problem it was necessary to separate the cost of the fuel itself into various items of manufacture.

The Monday afternoon session was opened by C. L. May of the Community Natural Gas Co., Dallas, with a paper entitled "Ideal Distribution Systems for Communities of 250 to 1,500 Meters," which dealt entirely with construction and details of lines mostly in new consuming territory. Mr. May said most of the points covered by his paper were also applicable to larger gas systems.

A paper by E. L. Rawlins, of the United States Bureau of Mines, Bartlesville, "Review of Open Flow by Pressure Methods," was supplemented by papers on the same subject by Donald P. Fuellhart, engineer for Brokaw, Dixon, Garner & McKee, New York, and C. P. Parsons, Magnolia Petroleum Co., Chickasha.

Mr. Rawlins, in attacking the open-flow method of testing, explained the expense of lost gas and advocated determining the capacity of wells by pressure conditions rather than open flow.

Mr. Fuellhart said waste of gas in the open-flow method was small compared to actual damage to many wells and he presented a series of charts and graphs showing results of many experiments. He gave as conclusions that it is practical to determine capacity by the pressure observation method, thereby eliminating any possibility of physical damage to properties.

Studied from Economical Standpoint

Mr. Parsons said he had studied this problem from an economic standpoint rather than from a scientific one and mentioned the Chickasha gas field, stating that in one year the gas wasted by the open-flow method of testing resulted in a loss of $120,000 if the wells were tested once a month.

Discussion of Mr. Parsons' paper, led by Walter E. Reed, consulting engineer, Dallas, and W. F. Chisholm, Louisiana Department of Conservation, resulted in extensive argument as to the necessity of blowing gas wells to test capacity when they first penetrate the sand.

Secretary William C. Grant presented a report on the Southwest division, giving many interesting facts about the early history of gas in Texas and relating progress made in recent years. He said that since 1927 over 200 cities had been furnished with natural gas for the first time since their foundation and he commented on the fact that New Orleans, one of the first American cities to have artificial gas, was one of the last cities in the Southwest to be furnished with natural gas. Considering the future of the Southwest, he said that his only recommendations were that the locality be more heavily populated to take better advantage of such ideal fuel situations and that industries should be heartily encouraged to enter the region.

Tuesday Sessions

Papers on account and advertising opened the Tuesday sessions. One by Miss Lois Upshaw, of the Dallas Gas Co., dealt with "Gas Company Advertising." Joe Zeppa, secretary of the Arkansas Natural Gas Corp., Shreveport, discussed accounting in a paper on "Proper Classification of Accounts for Natural Gas Producing, Pipe Line and Distributing Companies."

Practical field problems were handled in a paper on "Proper Casing and Tubing of Gas Wells" by H. C. Otis, of the Arkansas Natural Gas Corp.

Monday's sessions and the Tuesday forenoon session were held in the Washington Hotel, but the closing session this afternoon was held in the ballroom of the Youree Hotel, with F. Ray McGrew, of the Standard Pipe line Co., presiding. The closing session was a joint one of the Southwest Division Engineers and the Louisiana Section of the American Society of Mechanical Engineers.

The feature of the session was a paper by P. McDonald Biddison, of Monroe, La., on "Economic Problems of High Pressure Gas Transmission." The author of the paper was unable to be present and it was read by J. L. Foster, of Dallas. This paper had aroused exceptional interest among technicians and many gas engineers came from Texas and Oklahoma especially to engage in the discussion of this subject.

Discussion of Mr. Biddison's paper was general and protracted. It covered not only the economic aspects of high-pressure transmission, but included much of a technical nature.

The National Tube Co. presented an interesting moving picture, showing in detail process of manufacturing seamless line pipe.

John M. Egan Is Made General Manager, The Oil and Gas Journal

John M. Egan, editor and general manager of The Oil City Derrick, has been made general manager of The Oil and Gas Journal, succeeding his brother, Robert W. Egan, who died December 15. Mr. Egan will assume his new duties this week and will make his home in Tulsa. John O'Donnell, editor and manager of the Daily News Standard of Uniontown, Pa., will succeed Mr. Egan on The Oil City Derrick.

JOHN M. EGAN

John M. Egan has had extensive newspaper and business experience, including the development of oil field properties in West Texas. He began his newspaper career with the old Pittsburgh Times and later was connected with the Pittsburgh Dispatch, serving for a time as the New York representative of that publication. His administration of The Oil City Derrick has been markedly successful.

Mr. Egan has kept in close touch with matters affecting the petroleum industry and his experience in that business has given him a broad knowledge of conditions which will be of great aid to him in his future work, and in carrying out the policy of The Oil and Gas Journal to serve the entire petroleum industry.

Curve for Measuring Gas Well Volumes

Pressure Decline Curve Declared to Be Fundamentally Sound. Useful in Estimating Deliverable Gas Reserves

By C. P. Parsons*
Field Superintendent, Magnolia Petroleum Co., Cyril, Okla.

Up till last year the Nichlos sand in the Chickasha gas field had delivered into the carriers' pipe line 20,000,000,000 feet of gas, 90 per cent of which was measured and taken by one pipe line company. Accompanying that delivery was a decline of 65 per cent in shut-in pressure. There were 60 producing wells in the sand.

Also in that field were other gas sands with 190 producing wells that could serve as a checkup on any technical deductions that might be based on the Nichlos sand.

With such an opportune and favorable condition as that it was apparent that a detailed analysis of the Nichlos sand might throw practical light on some economic field problems of the gas industry, especially on theories aimed at eliminating the necessity for blowing gas wells in the Chickasha Field in order to get month-to-month volume readings as the basis for prorating delivery.

As an operator our problem was concerned directly with our 54 gas wells in that field but since the problem dealt with a "basis for prorating delivery" it meant that any conclusions we might arrive at must not only satisfy ourselves but must satisfy other operators in the field and the Corporation Commission.

Theories were subjected to that condition and a plan was developed, based on a detailed analysis of the Nichlos sand and later checked with other sands. It was completed last August, but before seeking actual application the plan was submitted to and endorsed by several prominent engineers.

For the sake of technical clarity and directness both in preliminary and formal discussions the claims of the plan were aimed specifically at the blowing of wells in the Chickasha Field, especially the wells of the Magnolia Petroleum Co.

A formal hearing was held before the Oklahoma Corporation Commission on January 2, with many operators present. Permission was granted and the plan is now in operation on the gas wells of the Magnolia Petroleum Co. in the Chickasha gas field. Several other operators have expressed their intention to use it.

Basis of the Plan

The plan is primarily based on a "pressure-volume decline curve" that shows the percentage of volume decline that accompanies any percentage of shut-in pressure decline. The volume of a gas well is determined at any time by a simple problem in arithmetic. Thus the curve takes the place of blowing the wells to get month-to-month volume readings as a basis for proration of delivery.

That is the heart of the plan.

As simple as this seems and though the curve was based on data in the Chickasha gas field there is an angle from which to look at this curve that shows more general possibilities. This will be explained later.

For purposes of comparison brief descriptions of the old and the new procedures for reading gas well volumes in the Chickasha Field will be given.

Old Procedure

When a gas well is first brought in it is customary to allow the well to blow into the air long enough to clean itself of drilling water or mud. This blowing is quite impossible to eliminate, therefore cannot now be called waste. When the gas becomes clean an open flow reading is taken by the pitot tube method and the well is shut in at the master gate. The Christmas tree is connected up and the well is ready for connecting to the delivery line.

When the delivery connection is made and before delivery actually starts the pipe line company blows the well and takes an open flow reading as the initial basis for figuring proration of delivery.

After that the well is blown regularly, usually once a month, to correct for the natural volume decline due to withdrawal of gas or to see if the well is making water. These readings are used to figure the month-to-month proration of sales delivery. In many cases the amount of gas blown into the air to take a single open flow volume reading of a well was greater than the delivery for a month.

Advantages of Old Procedure

The taking of open flow volume readings of gas wells by the pitot tube method is fundamentally sound, has had long usage and generally accepted as simple, practical and equitable. Almost any experienced gas field man can take an open flow reading with a pitot tube and reference to the simple chart in general use that shows the open flow volume through different size openings at different pitot tube readings.

There may be reason for checking this simple chart as to its accuracy for present requirements but the simple chart is used by all operators and therefore is uniform and equitable.

Objections to Old Procedure

The amount of gas blown into the air for the purpose of taking regular open flow readings is tremendous.

To take just one open flow reading of all the gas wells in the Chickasha Field at this time requires blowing into the air at least 100,000,000 feet of gas, with a value at the well of about $10,000. At that rate the total yearly value of the gas blown into the air with readings taken monthly would be at least $120,000. The field is almost seven years old.

In addition to that loss of gas there is considerable yearly expense on the part of the pipe line companies to regularly blow and take open flow readings of the 250 wells in the field.

How to Overcome Those Objections

For a plan to have any chance of being adopted and then carried out as a routine of field practice it must fit the conditions already mentioned and must be at least as practical and simple to operate as the old procedure. It should be free from involved calculations. It should be uniform, basically equitable and fundamentally sound.

New Procedure

The plan recently installed on the Magnolia Petroleum Co.'s wells in the Chickasha Field retains all the advantages of the old procedure and eliminates the objections described. It has other advantages, summarized later.

Operation of the Plan

It is quite impossible to eliminate the first blowing of a gas well when the well is brought in, therefore, this blowing is put to use in the plan as the time to take an official and initial volume reading. Since the pitot tube method is fundamentally sound, has long been used and generally accepted as simple, practical and equitable it is used in the plan to take the initial volume reading. To make this reading official it will be necessary for the operator to inform the pipe line company when he intends to bring in the well. The pipe line company will

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*Before meeting Southwest Division, Natural Gas Department, American Gas Association, Shreveport, La.

Proper Casing and Tubing of Wells

Craters in Shreveport Area Declared to Be Due to Improper Casing Methods and Needless Water

By H. C. Otis*
Superintendent Gas Production Arkansas Natural Gas Corporation

That there is need of discussion of proper casing and tubing methods is evidenced by the fact that here in the Shreveport area alone during the past year there have been three craters in three different fields, each crater traceable directly to improper casing methods, and by the further fact that all through the territory production from wells is being needlessly hampered by the presence of water.

One of the craters referred to has died a natural death, aided by a fortunately located water sand, but not until after water had been pulled into that part of the field, causing a considerable financial loss to other operators. The other two are today still very active and are estimated to be responsible for a daily loss of a million cubic feet of gas. In one of these craters new pipe was used, but pipe too light for the anticipated rock pressures. In the other two used pipe was set in the final strings. In one, if not in both instances, the string parted after being landed on bottom. In the one instance in which definite information is available, the upper portion of the parted string was pulled out, a new collar screwed on, the pipe run back into the hole, an attempt made to make it up on the balance of the string, and the well, with a rock pressure of over 1,100 pounds brought in without further testing. An instance such as this is of course an extreme one, one which is not apt to occur in the operations of any responsible company.

Proper Casing Point

What constitutes proper casing of a gas well? Obviously it is not only the mechanical features, which involve the use of new, sufficiently heavy casing with plenty of cement and thorough testing which should be considered in a discussion of this subject, but also the matter of the proper casing point.

It possibly is not an exaggeration to say that more gas is lost annually through failure to set casing at proper depth, with resulting underground leakage and intrusion of water from above the sands, than is lost through all our craters combined. The question of proper casing depth in cable tool fields is of course simple. In rotary fields it is, however, a different matter. Here, in fields such as ours, where production often is not found in a well defined sand of uniform thickness, but rather can be looked for anywhere in a general horizon a hundred feet or more thick, the matter of selecting a proper seat is more difficult. In some of our local fields the producing sands are overlain by a layer of loose shale, separated from the sand only by a few feet of gumbo. In a few instances water sands occur only a few feet above the producing horizon. Improvements in core barrels and the use of testing tools have done much to remove the guess work in this connection. Certainly, whenever it is feasible, the correct procedure is to reduce the hole at a safe distance above the sand, then, unless the pressures anticipated are dangerously high, to core into the sand and with the information thus obtained, set and cement the casing through the cap directly on top of the sand itself. Where doubt exists as to the commercial possibilities of a sand, drill stem tests can usually be made at a nominal expense, and where proper precautions are taken, there is little danger of blowouts.

Consider next the pipe used. The best obtainable at almost any price, is in my opinion, the cheapest in the end. Gas wells, in this general territory, represent investments ranging from $3,000 to $65,000 or more each. The cost of casing in these wells is always a very considerable item, but the difference in cost between new reasonably heavy casing and used casing light or heavy, is but a small percentage of the total investment.

The greatest danger in the use of used casing lies in its possible resistance to failure from fatigue. The strength remaining in metal which has been subjected to the extreme strains which casing must undergo, cannot always be determined by a surface examination of the metal itself. Casing, which on the outside appears to be as good as new may, through a breaking down of its structure not visible to the eye, be weakened to the point where only comparatively slight further strains will result in failure.

Structure of Steel

Steel is crystalline in structure. Microscopic studies have shown that stresses, well below the elastic limit of the metal itself, may break or crack into thin parallel layers a scattered few of these crystals which structually were a little weaker than others. Continuation of the stress causes these layers to slip on each other, while further continuation will cause the cracks to slip bands as they are called, which separate the layers to pass around or through other crystals, each continuation further decreasing the strength of the metal. Alternate reversal of the direction of stress causes the layers in the ruptured crystals to slip back and forth on each other, each movement polishing their surface and making easier the passing on of the cracks to neighboring crystals, thus rapidly accelerating the weakening of the structure. Eventually the metal becomes weakened to the point where only a comparatively small additional stress causes failure, in spite of the fact that during this process of break down there might not be visible on the surface of the pipe a crack or pit or tong mark. Such a joint laying on the pipe rack, possibly still even with the manufacturers' stencil legible, would be referred to as being "as good as new." Pipe "good as new" on its surface has caused the loss of many a well.

Various Stresses

That part of a string of casing which is not supported by cement is continually under vertical stress due to the weight of the joints above. The more crooked

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*Before meeting Southwest Division, Natural Gas Department, American Gas Association, Shreveport, La.

Opportunity in Road Oil Research

Great Expansion Possible, Declares E. W. James, Chief of Division of Design, United States Bureau of Public Roads

WASHINGTON, D. C., Jan. 14.—The oil industry is overlooking an opportunity to open up a vast market for road oil, according to E. W. James, chief, Division of Design, Bureau of Public Roads. At the present time the road oil bill is $10,500,000, but the possibilities for a market for road oil appear to be about 24 times that figure, Mr. James estimates. This subject was recently discussed by Mr. James before the Asphalt Paving Congress at New Orleans.

"Now that our oil output has reached its highest peak in history with a vast potential production in South America that threatens to unsettle, through overproduction, the oil markets of this country, it is difficult to understand why the oil industry does not begin an effective research program to determine specifications for road oil adaptable to different regions and so create a widespread demand.

"The practicable large scale commercial production of light road oils so that they may be purchasable on specification for a certain definite use anywhere in the South, Middle West and West, without regard to their origin, is not a laboratory problem. It is an industrial problem. For this reason it is a problem for the oil industry to solve.

"The road builder of today is not certain as to the proper physical use of available road oils. He does not know just how they may be used. There are differences of opinion, whether natural gravels, crushed gravels, or fine crushed stone are best in the surface mixed roads of the Far West. The oiling of earth roads with certainty of success is not now possible on all soils. It may never be, but sufficient investigation should be made to fix the successful limits of this process.

Should Advise Road Builders

"If the oil industry would undertake to determine these questions so that it would be in a position to advise road building agencies in respect to the kind of oil that could be successfully used under different conditions, there would open up over night a vast demand that does not now exist solely because road builders are not informed in respect to the adaptability of different road oils under different conditions.

"In other lines of the industry, oil companies do undertake to advise and furnish the type of fuel or lubricant best adapted for uses for which they are demanded.

"The durability, and the ability to carry traffic, must be determined for all the possible uses of light oils. Some will be so temporary in character as to be necessarily confined to maintenance operations, some will be adaptable to construction for light or perhaps medium traffic. A few uses may develop value as true intermediate construction types just under bituminous macadam or perhaps equal to it.

"The oil industry has very largely confined its interests in the manufacture of highways to the production of asphalts required essentially in a limited range of high-type pavements in which it must compete with other materials suitable for similar pavements. It has left almost unnoticed that huge field for the use of cut-back asphaltic products for surface treatment and low-cost roads.

Vast Market

"The vast market that would be opened up to the oil industry if it were able properly to advise road builders and furnish proper road oil for different uses, can best be understood by a reference to the vast mileage of low-grade roads now awaiting improvement. The total mileage of public roads in the United States is close to 3,000,000 miles. On January 1, 1927, state roads aggregated 191,516 miles in length and 96,413 miles were unimproved. Local roads on which some work had been done aggregated 985,808 miles and those that were unimproved totaled 1,726,454 miles. Here we have a grand total of 1,177,324 miles of improved roads and 1,822,867 miles unimproved.

"Of the improved roads over 600,000 miles are graded and drained only and have no surfacing of any kind. Of these improved roads, 300,000 miles are of gravel, very little of which has been surface treated. The total mileage of types below waterbound macadam represents over 1,000,000 miles or approximately 88 per cent of all improved roads. Waterbound macadam, most of which has undoubtedly been surface treated, and bituminous macadam represent another 85,000 miles, approximately 7 per cent of the entire improved mileage.

"It is the group of low type improved roads represented by gravel, sand-clay and graded and drained earth that furnishes one of the most serious problems facing the highway engineer and the several states at the present moment. These roads have been improved under a variety of conditions, and apparently at the time the work was done the improvement was adequate for the existing traffic. There is a powerful and effective force of public opinion toward the improvement of a large mileage and this unquestionably is going to be effective for many years longer. This will encourage the continued construction of low type roads.

Increasing Need

"Along with this condition, however, we have another just as certain and imperative, which is the constantly increasing traffic. Many states in the semiarid and arid regions have built graded roads and light gravel surfaces which were expected to furnish highway service throughout the year. This result has been secured but at a heavy cost. It has been found that quantities of material lost by reason of the dry climate and high winds, which may fairly be assumed to increase the deterioration of many of these gravel roads, actually cost more to replace per year than it would cost to oil the surfaces.

"The earth roads remain serviceable except for the occasional periods of rain when the thirsty soil, dry, porous and avid for moisture turns the road surfaces, frequently hard though dusty, into impassable mud. But in the dry season the regions where these roads predominate are plagued with a dust nuisance, which 25 years ago with the advent of the automobile was considered a sufficient incentive for improving the roads which then existed. This dust nuisance is still very real in large parts of our country.

"The State of Nebraska has built approximately 3,600 miles of gravel in a total improvement on the state and federal aid systems of 4,100 miles of road. The State is out of the mud, but in the dust, and at some seasons the dust is so bad as to constitute a driving hazard for motor traffic. The large and important problem to us is to devise ways and means for raising these low type roads to a condition where they will be dustless and reasonably waterproof. This is the first phase of the problem wherein should lie the interest of the oil industry.

Research to Get Results

"It was only about two years ago that the question of inexpensive, low type roads received for the first time serious attention from the point of view of the present demands. A project was instituted by the Highway Research Board and the American Road Builders Association to study types and the development of low cost construction. It is clearly indicated as a result of these studies and of others by the Bureau of Public Roads; by the States of Illinois, Wisconsin, Minnesota, Oregon, and California that the use of oil products promises the most successful and inexpensive methods for raising these low type surfaces and improvements to a condition satisfactory to meet the public demand. Scattered here and there throughout the country we find determined efforts at oiling earth roads; for placing mats of oil and sand, or oil and fine cover material on sand-clay roads; for surface treating gravel roads.

"More ambitious efforts have evolved methods of processing crushed gravel and fine crushed stone road surfaces in the far West. We have developed double surface treatment, retreading methods which are classified by A. H. Hinkle of Indiana into the four following groups: Ordinary surface treatment, mulch mixtures, retread tops and penetration tops. In all of this sort of work the only method which experience assures us to be generally satisfactory is the surface treatment of waterbound macadam by either the single or double application. The engineer is not certain of good results when he attempts to oil earth or sand-clay roads.

Surface Treatments

"The application of surface treatments to gravel and the so-called process methods, developed in parts of Indiana and by two or three western states, have not yet shown complete dependability. Treatments of this sort are applicable to approximately 88 per cent of our entire improved road system, and if we include the necessary resurfacing of surface treated macadam and the resealing of bituminous macadams, it applies to not less than 95 per cent of all the roads so far improved.

"The development of a method or methods for performing this work successfully and of furnishing materials so graded and specified that satisfactory results may be depended upon, is unquestionably the largest single problem confronting the highway engineer today; and it furnishes a field for industrial expansion in the oil industry of the very greatest possibilities.

"An examination of the practical possibilities of this matter to the oil industry will serve to indicate its importance better than any generalization. We will start with the most obvious treatments and analyze the probable annual requirements. The work connected with this tremendous problem will give some indication of what it can be made to mean in the oil industry. Using round figures for convenience, we find that there are 24,000 miles of bituminous macadam in our present highway inventory. Most of this will have to be resealed or retreated at least once in five years. This gives us an annual retreatment program of 4,800 miles.

"We have approximately 61,000 miles of waterbound macadam in our national highway system. Probably a very large part of this has been surface treated, but we will be conservative and estimate that only 50 per cent of it is so treated, or approximately 30,000 miles. Of the gravel roads it is doubtful if more than a small fraction has been surface treated because of the difficulties experienced with this type of application. If we liberally assume that 10 per cent of the 325,000 miles of gravel roads are already

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CLASSIFICATION OF ACCOUNTS FOR NATURAL GAS COMPANIES

By E. N. Watkins*
General Auditor, Arkansas Natural Gas Corp.

It is my purpose to dwell principally on the necessity for the adoption by the natural gas industry of a uniform accounting method of handling all transactions pertaining to their business and, if this paper succeeds in bringing about a realization of this need and the appointment of a committee composed of men qualified to handle the subject to collaborate in the compiling of a detailed classification of accounts which can be and will be adopted by the gas industry in this section and possibly by the gas industry throughout the nation, my purpose will have been achieved.

The needs for the development and adoption of uniform classification of accounts for our industry are many. The financial sheet is the statistical photograph of an enterprise on the basis of which the management, the public served, the financial institutions which furnish the capital and the commissions which regulate the industry form their opinions. This financial sheet is simply a summary of thousands of small items which have entered into the accounts during the course of the month or year. The theory followed in the handling of these individual items determines the final picture. Therefore, before one can form a correct opinion of the organization from such a picture one must know the method followed in composing it. If a uniform method is followed by all companies engaged in the same industry, understandable comparisons can be arrived at by any one interested in the results of its operations.

If such a classification can be generally adopted and the approval of the rate regulation commissions obtained, the settlement of rate cases will be greatly facilitated. It will no longer be necessary for a commission to make detailed investigations of a company's accounts in order to determine its invested capital, its income, expenses and profits, but it will merely be necessary for such a commission to ascertain that the entries placed on the books have been honestly made in accordance with the method prescribed. This alone will be of incalculable value to natural gas companies engaged in the utility business subject to regulation. At the present time the settlement of rate cases involves not only a discussion of what the company's profits are but also innumerable arguments on the methods followed in arriving at the profits disclosed by the books of accounts.

All of us have experienced the difficulty of forming a dependable opinion of the financial status of companies engaged in the oil and natural gas business from the statements submitted. It is the general practice of all financial institutions to require detailed appraisals of such properties before extending financial accommodation, because of the undependability of the balance sheets and profit and loss statements of such companies arising from the fact that few of them follow the same practice in the handling of their accounts. The American Petroleum Institute recently adopted a uniform classification of accounts for companies engaged in the oil and refining business in recognition of this fact.

On the other hand, the financial state-

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*Before Southwest Division, Natural Gas Department, American Gas Association, Shreveport, La.

Handling Mid-Continent Flowing Wells

Methods for Utilizing the Original Supply of Natural Gas Energy Emphasized in Paper by Production Engineer

By J. R. McWilliams*
Production Engineer, Skelly Oil Co.

The handling of natural flowing wells in a manner to make best use of the compressed gas which Nature has stored with oil in an underground reservoir is of prime importance. Gas under natural reservoir pressure is a source of energy and expansion of this compressed gas is the major factor in determining the amount of oil that can be forced from the reservoir to a well. During the early life of a well when the oil and gas production from the reservoir is obtained from an area near the well and the reservoir pressure is relatively high, only part of the energy in the compressed gas is required for lateral movement of the fluids and the remainder may be utilized to lift the oil to the surface. The potential supply of energy in the form of compressed gas is limited and as oil bearing formations at progressively greater distances from the hole are drained, the amount of expansive energy required for lateral movement gradually increases. It is obvious that sooner or later there will be an inadequate supply of energy at the bottom of the well for lifting and the well will then stop flowing.

This paper has been prepared to emphasize the need for utilizing the original supply of natural gas energy at the bottom of the hole which is generally adequate to flow the average well in the Mid-Continent Fields a considerable length of time if it is made to do most effective work. Both the use of gas energy in recovery of oil from the reservoir rocks and in lifting are considered. The discussions apply primarily to conditions as they exist in the Mid-Continent fields of the United States.

*Before American Petroleum Institute.

Flowing Conditions

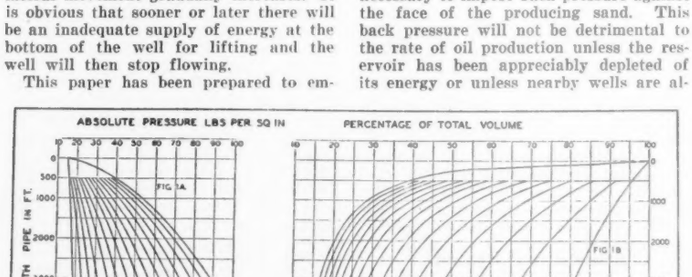
In actual practice in Mid-Continent fields it is generally customary to allow a well to flow through the oil string so long as the decline in oil production is not too rapid. Frequently agitating or swabbing is resorted to as a means of retarding the rate of decline in oil production and of keeping a well flowing but sometimes a string of 2-inch or 2½-inch tubing with a packer is run in wells that appear to have enough gas to flow naturally.

Usually formation gas-oil ratios of oil wells in the Mid-Continent range from 1,000 to 3,000 cubic feet of gas per barrel and this volume of gas per barrel of oil under existing reservoir pressures is usually enough to flow the oil to the surface without any swabbing or agitating if the well is equipped with a flow string and handled in such manner that the compressed gas energy is put to work.

From the viewpoint of energy consumption the depletion of the compressed gas in the reservoir goes on just the same whether the well is swabbing or flowing. In fact a swabbing well generally consumes more reservoir energy than a properly equipped flowing well because a greater volume of gas accompanies each barrel of oil.

In actual field practice it is customary to attempt to maintain a high rate of oil production by decreasing the back pressure on the producing sand. There comes a time in the life of a well when low back pressures are necessary, but for the most part a relatively high back pressure should be maintained as this will conserve the natural energy and result in a slower rate of decline of oil production.

If a well is made to flow its oil production with its own gas production, it is necessary to impose back pressure against the face of the producing sand. This back pressure will not be detrimental to the rate of oil production unless the reservoir has been appreciably depleted of its energy or unless nearby wells are allowed to flow with low back pressures. It is the writer's belief that an operator by properly equipping his well can even flow it when offset wells are swabbing or pumping provided he gives due consideration to the degree of energy depletion surrounding the well.



Expansion of Gas in Flowing Wells

On an average the volume of gas, measured under atmospheric conditions, produced with the oil in the Mid-Continent is from about 200 to 500 times the volume of oil. This gas-oil ratio considered on a volume basis, decreases progressively down the flow pipe according to the absolute pressure encountered. Also the decrease in the volume of the expanding gas causes a progressive decrease in the velocity of the flowing column of oil and gas. The lower part of the flow column is probably moved by an aerating effect of relatively dense and slow-moving gas bubbles in oil, while the upper part must be moved by a purely "velocity" flow of gas carrying drops of oil.

It is the expansion of compressed gas that does the work of lifting the oil to the surface but the rate of expansion per lineal foot of flow pipe has an important effect upon the velocity at which the drops of oil can travel through various sizes of flow pipes. There is a limit to the amount of gas which should be expanded through pipe of a given cross section if a maximum amount of oil is to be flowed from the well. This statement applies to that section of the flow pipe where so-called velocity lift predominates.

Data from a gas lift well in the Panhandle Field are thought to substantiate some of the above observations. This well had 6⅝-inch casing and 3-inch tubing. The end of the tubing was not restricted in any way and was about 80 feet "off bottom." The total depth of the hole was 3,224 feet. Orifice meters were installed to measure the volume of gas injected into the well and the volume of gas discharged from the well. The well was flowed through the 3-inch tubing due to the prevalent trouble with paraffin in that district and the frequent need for running paraffin scrapers. A gas trap was installed outside the derrick and all sharp turns in the flow line were eliminated. A pressure of 375 pounds per square inch was held at the casinghead for several hours before the well started flowing. After "cleaning the hole" the well flowed at the rate of 50 bbls. per day with the pressure gauge on the casing registering 105 pounds per square inch. The volume of gas discharging from the well was in excess of 2,000,000 feet per day. The pressure on the trap was 15 pounds per square inch. Decreasing the volume of gas injected into the well increased the pressure at the casinghead to 135 pounds per square inch. The gas discharged decreased to 800,000 feet per day and the oil production increased to 600 bbls. per day. The pressure on the trap under these conditions was only 6 pounds per square inch. Further changing of the volume of injected gas so that the discharged volume was 1,500,000 feet per day, decreased the oil production to 425 bbls. per day. The casinghead pressure during this test was 125 pounds and the trap pressure 8 pounds per square inch. The following tabulation summarizes results of these tests:

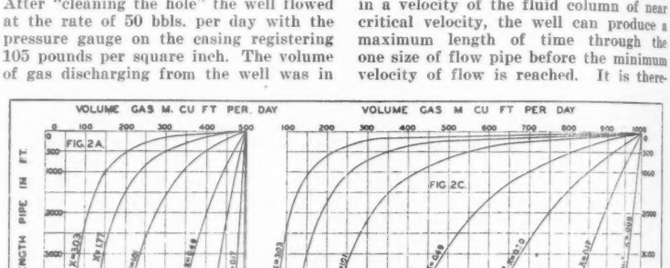

VOLUME GAS M. CU FT PER DAY
VOLUME GAS M CU FT PER DAY
LENGTH PIPE IN FT.
FIG. 2A
FIG. 2C
1,000,000 CUBIC FEET GAS PER DAY DISCHARGE AGAINST 30# ABSOLUTE PRESSURE
1,000,000 CUBIC FEET GAS PER DAY DISCHARGE AGAINST 15# ABSOLUTE PRESSURE.
VELOCITY FT PER SECOND
FIG. 2B
FIG. 2D
TOP
VOLUME GAS M CU FT PER DAY
VOLUME GAS M CU FT PER DAY

TABLE 1

Test No.	C'sgh'd Pres. lbs per sq. in. Gauge	Trap Pres. lbs. per sq. in. Gauge	Total Gas Prod. 1Mcu ft per Day	Oil Prod. Bbls. per Day
1	105	15	2,000+	50
2	135	6	800	600
3	125	8	1,500	425

From these data it obviously was not the back pressure against the face of the producing sand that decreased the amount of oil lifted to the surface when the larger volumes of gas were circulated, for the casinghead pressures were actually lower than when a smaller volume of gas was injected. Apparently, there was a critical velocity above which the drops of oil were unable to travel.

In handling natural flowing wells in the field, it has been observed that back pressures applied at the top of the flow pipe will often increase the rate of oil production. However, a measurement of the rate of gas production will generally disclose the fact that the critical velocity in the flow pipe had been exceeded before the back pressure was applied. Also it is frequently possible to increase the rate of oil production when a well is flowing through tubing by allowing some gas to escape through the casinghead. This is generally true where the critical velocity in the tubing has been exceeded.

In handling natural flowing wells the operation from an economical viewpoint is desirous of causing them to flow as long as possible. It is also desirable to flow a well through one size of flow pipe as long as possible. If a flow string is run in a well with the idea of resulting in a velocity of the fluid column of near critical velocity, the well can produce a maximum length of time through the one size of flow pipe before the minimum velocity of flow is reached. It is therefore important if possible to determine this critical velocity for various sizes of flow pipes.

Considerable data are available concerning the flow of gas through pipes, but very little is known regarding the flow of oil and gas mixtures. An inspection of graphical data based upon gas formulae helps clarify somewhat the pressure-volume-velocity changes in say, the last 1,000 feet of flow pipe where the ratio of the volume of gas to the volume of oil is large, and therefore an oil and gas mixture should tend to approach the performance of gas only.

Weymouth's[1] formula for the flow of natural gas through pipe lines is as follows:

$$Q = 433.5 \left(\frac{T_o}{P_o} \right) \left[\frac{5{,}280 - D^{5/3}(P_1^2 - P_2^2)}{G\,T\,L} \right]^{\frac{1}{2}}$$

Where
Q = Flow per 24 hours—cubic feet.
D = Internal diameter of pipe—inches.
L = Length of line—feet.
G = Specific gravity of gas—(air = 1.0).
T_o = Absolute temperature base of the unit cubic feet—degrees Fahrenheit.
T = Absolute temperature of flowing gas—degrees Fahrenheit.
P_o = Absolute pressure base of the unit cubic feet—pounds per square inch.
P_1 = Absolute pressure at initial end of line—pounds per square inch.
P_2 = Absolute pressure at terminal end of line—pounds per square inch.

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[1]Transactions of the American Society of Mechanical Engineers, Vol. 34, pp 1,091-1,094.

Gas Blowouts in Little River Field

Present Important Engineering Problems and Indicate Presence of Extensive Gas Area in the Cromwell Sand

By R. Van A. Mills
Petroleum Engineering Editor

Two serious gas blowouts in the South Little River Field of Oklahoma, the first occurring on December 11, and the other only two days later, have presented some serious petroleum engineering problems to the operators in that part of the Greater Seminole district and have also indicated the presence of an extensive high pressure, large volume, gas area in a formation overlying the Wilcox sand, probably in the Cromwell or in a sand closely overlying that formation.

Hind sight is better and much easier than fore sight, so it is not difficult to say what might or might not have been done to avoid these blowouts. Competitive production and haste in drilling to the big production in the Wilcox sand are mainly responsible. If rotary returns could have been systematically collected and examined, and time taken to core and test the sands overlying the Wilcox throughout the South Little River Field, these blowouts would never have been permitted. The rotary method of drilling, and the fact that oil and gas in good pay sands often are mudded off without being detected unless special precautions are taken, are not so much to blame as the competitive methods and haste imposed upon both the operators and the drilling contractors.

In this case attention was focused on the big production in the Wilcox sand with comparatively little thought of the overlying formations in which only small shows of oil and gas have been found. Shows of gas had been noted at about 1,800 feet, and others at about 3,400 feet, but no evidence of high pressure or great volume had been observed.

The Carter Well

On December 11, the Carter Oil Co. was preparing to standardize and complete its No. 1 Jim Walker in NW NE NW, Section 24-7n-6e. The well had been drilled to 4,402 feet where the 8¼-inch casing was set and cemented with 500 sacks (25 tons) of cement. There was also 60 feet of 12½-inch surface pipe cemented in the well. Without previous warning, in the early morning of December 11, when there were no men on tour, and four days after the 8¼-inch casing had been cemented, the well began to eject its mud fluid from between the 8¼-inch and 12½-inch strings. The mud was soon accompanied by gas, salt water and sand, and a blowout was in progress.

This was followed two days later by gas breaking through to the surface for distances of as much as 100 feet from the well, evidently coming up through rock crevices under the soil. One large blowout through the ground occurred on a hillside about 80 feet to the east of the well. At this time the total flow from the well and the nearby craters was estimated by some to be as high as 80,000,000 to 100,000,000 cubic feet per day. A more conservative estimate places the flow from the principal crater at between 12,000,000 and 15,000,000 cubic feet with another 15,000,000 to 20,000,000 cubic feet coming from between the 8¼-inch and the 12½-inch casing.

In considering the immediate causes for this blowout, it is evident that the pressure of the mud fluid in the hole during drilling operations was sufficient to kill the gas. It is also probable that the mud fluid in the hole subsequently settled or subsided until the pressure was sufficiently relieved to allow the blowout. Cutting of the mud by the gas may also have played an important part in lightening the column of fluid and lowering its pressure so as to permit the blowout.

In the first effort to bring the well under control, a 6-inch line was run from the control head connections to a 6-inch riser extending approximately 40 feet into the air and located about 150 feet from the well. With these precautions for disposing of the gas at a safe distance from the well, the 8¼-inch casing was filled with mud and perforated at a depth of approximately 2,500 feet, to divert the gas through the casing and control head to the riser. When this was done the well ejected the mud from the 8¼-inch casing and the flow through this string was increased to at least 50,000,000 cubic feet.

Well Catches Fire

On January 2, the effort was being made to kill the well by mudding it off through the perforations in the 8¼-inch casing. The mud was to be run through 3-inch tubing extending to a depth of about 2,500 feet inside the 8¼-inch with a tight head on the well. In some way the 8¼-inch casing seems to have been badly damaged with a hole through it at a depth of 150 feet, so tubing was run instead of forcing the mud directly into the 8¼-inch through the casinghead. The effort was also to be made to pack off between the 8¼-inch and the 3-inch below 150 feet. As the tubing was being run at a depth of 1,400 feet, and with two men in the derrick and six on the floor, there was a crack and a flash from some outside and unknown source, and the well was on fire. One man in the derrick slid down a guy line, the other slid down a derrick leg, and those on the floor ran. All escaped without serious injury, due principally to a high wind which blew the gas and flames away from the men, and possibly to the fact that they wore gloves and slickers and were drenching wet with salt water. At 3:30 o'clock on January 3 the crater on the hillside east of the well was ignited. With the fire then extending to craters and fissures around the well, the problem was complicated to say the least.

An interesting feature of this fire is the length of time that the steel derrick stood. It did not collapse until midnight of the day the well caught fire.

Extinguishing Well Fire

The job of shooting the fire out was contracted to the M. M. Kinley Torpedo Co. of Tulsa, who specialize in shooting out well fires. Fifty pounds of gelatin wrapped in asbestos insulation was placed against the casinghead by two men wearing asbestos suits and fire masks. These men walked almost into the fire and placed the charge by hand with no apparent discomfort. All shots were fired by electricity. The first shot failed to extinguish the fire. A second shot of 100 pounds of gelatin, protected in an iron drum and set off at the casinghead, extinguished the fire at the well, but it caught again by flashing back from the crater fire. In the third attempt, two charges of 50 pounds each were set off, the first one in the crater, and the second one at the well head 10 minutes later. This was successful, and the fire was extinguished at 7 a.m. on January 11, only 31 hours after the specialists took over the job.

Figure 1—Gas blowout and fire at Carter Oil Co.'s No. 1 Jim Walker, NW, NE, NW of Section 24-7-6. The flame at the extreme right is coming from the tubing and casing; that in the center is coming partly from the well and partly from fissures around the well, and that at the left is coming from the large crater on the hillside 80 feet east of the well. The remains of the steel derrick can be seen tangled about the control head.

The work of killing the flow of gas will probably be conducted along lines similar to those employed by the Mid-Continent Petroleum Corp. and described in this article.

Mid-Continent Well

At about the same time that the Carter Oil Co. had its blowout, the Mid-Continent Petroleum Corp. experienced a similar blowout in its No. 2 G. Aleck, situated in SE NE SE, Section 23-7n-6e. The well was completed dry in the Wilcox sand which was full of water at a depth of 4,488 feet on November 15. At the time the well was drilled, a small show of oil was found in the first Wilcox sand at 4,378 feet where it was shot without results. No shows of oil or gas were observed in the overlying formations.

In looking back at the drilling record of this well it is interesting to note that a water shutoff was not secured by cementing the 8¼-inch string and it was necessary to run and cement a string of 6⅝-inch to make a tight water shutoff. In the light of present information it seems probable that the cement back of the 8¼-inch was agitated by gas and prevented from setting.

Well Blows Out

Having proved that the well was dry, the Wilcox was plugged with lead wool and cement and the work of salvaging casing and abandoning the well was begun. A string of 5⅞-inch casing set in the Viola lime at 4,315 feet was pulled. The 6⅝-inch string set and cemented at 4,261 feet was shot off at 4,050 feet and pulled. Then on December 13 the 8¼-inch water string which had been cemented with 500 sacks was shot off at 1,800 feet with the intention of filling this string with mud and pulling it. About 45 minutes after the 8¼-inch had been shot off, mud began to roll out between the 8¼-inch and the short string (28 feet) of 15½-inch surface pipe which was cemented in place. The flow of mud quickly assumed blowout proportions and the field foreman gave orders to his men to clear out. At this point the story becomes similar to that of the Carter well. The landscape was painted with gray mud. Salt water and sand were shot over the derrick by a flow of gas estimated at approximately 50,000,000 cubic feet, coming up through the 8¼-inch. Gas and salt water also began to flow off through the ground around the well but fortunately there was no fire, probably due to the large amount of salt water accompanying the gas.

Controlling Well

A nipple with two master gates and also regular gas well connections were then set on the well head and water was pumped in through the casinghead at 1,200 pounds pressure with the cement pumps. The well held tight and took the water for 40 minutes but then broke loose in the cellar around the 8¼-inch. At the same time the pressure on the pumps dropped from 1,200 pounds to 600 pounds. It was about this time that the ground began to ooze gas and water for a distance of 150 feet around the well. After pumping in water for 60 hours without killing the flow of gas, resort was made to other methods.

A 6-inch relief line was run from the connections on the casinghead to a 40-foot riser 300 feet away and the well was turned wide open into this. Within 20 minutes the flow of gas ceased through the crevices and craters outside of the well. The blowout was then confined mainly to the 8¼-inch. The first riser was torn out by the excessive pressure and volume of gas and salt water but the next one held. So long as the well flowed wide open there was no further cratering.

A second hole was then spudded down 90 feet alongside and into the old hole outside the 8¼-inch casing. The first 40 feet were spudded with an 8-inch bit and the next 50 feet with a 5-inch. After 30 feet of spudding the circulation was lost, all of the return fluid evidently going into a cave or crevice. Only one joint of 6⅝-inch casing was set in this hole and cemented with 14 sacks of cement to which 3½ pounds of calcium chloride per sack were added. This was allowed to set 24 hours. Three hundred feet of 3-inch tubing were run in and water again pumped in but this did no

(Continued on Page 82)

Method of Natural Gasoline Analyses

Improve Apparatus for Fractional Distillation of All Gasolines and Similar Volatile Liquids. Practice Value to Operators

By Walter J. Podbielniak*

While it has long been recognized that the present testing methods used in the natural gasoline industry, such as the charcoal test for gas and the A.S.T.M. distillation for gasoline are not adequate or satisfactory, the actual analysis of natural gas and gasoline into the individual hydrocarbons of which they are composed has offered considerable difficulties. While the composition of natural gas and to a much smaller extent that of natural gasoline was studied in a research way, the analytical apparatus used was exceedingly complicated and difficult to operate. The time per analysis ran into days and the cost was excessive.

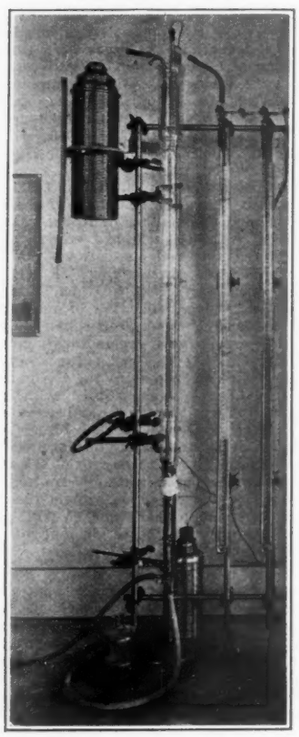

Figure 1—View of unsilvered fractionating column showing detail of construction and cooling vessel—also single unit apparatus without accessories.

The apparatus discussed in this article was developed to fill the needs of the natural gasoline industry for a simple, accurate and easily operated apparatus for the analysis of natural gas and gasoline into the actual hydrocarbons present, such as methane, propane, iso-butane, etc. It is based on the use of fractional distillation to separate with sufficient sharpness the more volatile hydrocarbons in natural gas and gasoline and is applicable to the analysis of all gaseous and liquid mixtures within the volatility range corresponding to methane-octane, which are subject to fractionation by distillation, such as the various artificial gases, thermally decomposed gas, combustion products, the volatile portion of motor fuels, etc.

The apparatus was first developed in an investigation carried out at the University of Michigan, in 1925-1926, by the writer with the guidance of Prof. E. H. Leslie, the Phillips Petroleum Co. of Bartlesville, Okla., contributing to the expense of the investigation. A fairly satisfactory analytical apparatus for natural gas and gasoline was developed which has since with minor changes been used for routine analysis in the laboratories of the Phillips Petroleum Co. for gasoline plant control, development and research work. An article by Oberfell and Alden in The Oil and Gas Journal October 18, 1928, page 142, describes the apparatus in this first stage of its development as adapted from the writer's research report.

The writer has accordingly continued his research on the fractional distillation method of analysis with the specific objectives of (1) greater sensitivity and accuracy of the analytical apparatus and (2) utmost simplicity, compactness and ease of operation. In this research he has been materially aided by the full cooperation of the various natural gasoline companies in whose laboratories he has installed the fractionating apparatus. As a result of this further research and the helpful suggestions received, the analytical apparatus was simplified and improvements incorporated to materially decrease the time of analysis and to increase the accuracy obtainable, especially in the case of "dry" natural gas samples and very volatile natural gasolines. In particular the operation of the apparatus was simplified and standardized so that it could be learned by an operator in a few days as a manipulative process without necessity for thorough understanding of the theory involved.

Improved Apparatus

The improved apparatus is now in use in the laboratories of most of the large natural gasoline companies of the United States and it is gratifying to note that the subject of "fundamental analysis" of natural gas and gasoline and its application to practical gasoline plant operation is the coming up more frequently for discussion at conventions of natural gasoline men and in the technical publications of the industry. The present article has been prepared in response to inquiries as to the present state of development of the analytical apparatus.

While the writer's report and the article by Oberfell and Alden already mentioned discuss the principle of the fractionating apparatus in more detail, it will be convenient to briefly outline the principles and certain more important considerations of the apparatus.

Principle of Apparatus

An obvious way to analyze a complex mixture is to separate its various components by some suitable physical or chemical process. In the case of hydrocarbons of the methane series, which are very similar chemically and differ mostly in boiling point fractional distillation is the only practical method for obtaining such separation with sufficient sharpness for analytical purposes. The apparatus is therefore based on fractional distillation and its accuracy is primarily dependent on the efficiency of the fractionation achieved in its fractionating column.

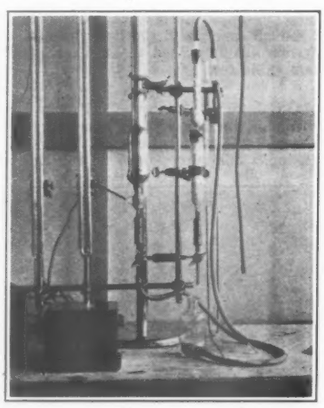

Figure 2—Bottom of silvered fractionating column, showing connections.

The fractionating column is made of Pyrex glass with a cooling chamber at the top and a distilling bulb at the bottom, the latter being electrically heated. (Figure 1.) Liquid air or any suitable refrigerating agent is blown into a copper cooling vessel immersed in a gasoline bath contained in the cooling chamber. Thermocouples in the vapor space measure the temperature of fractionated vapor and the rate of distillation is controlled by the two-way stopcock (second from left) which serves as a flow regulating valve. A manometer is provided as shown to measure the pressure in the column and another manometer beyond the regulating stockcock measures the pressure in an evacuated container into which the fractionated vapor is allowed to pass.

The distillate is collected in the vapor form in a container of known volume which is evacuated previous to analysis. The rising pressure in this container as indicated on the right hand manometer shown measures accurately the amount of vapor distilled into it.

The advantages of this method of collecting and measuring the distillate are many: (1) The vapor state is the only one in which ethane, methane and lighter gases may be collected at room temperature which is above their critical temperatures; (2) liquid air and cooling baths are not needed to condense the vapor to liquid; (3) the complications and difficulties of measuring and correcting to standard temperature in the liquid form are avoided, and (4) any desired accuracy of vapor volume measurement may be obtained by choosing the proper size of the vapor receiver, without need for pressure measuring instruments more exact than the ordinary mercury manometer.

The analysis of a gasoline or gas sample consists of (1) entering the gasoline or gas sample into a previously evacuated column with the reflux chamber sufficiently cold to reduce the vapor pressure of the gasoline to atmospheric or to condense the gas to a liquid which drains to the distilling bulb of the column, (2) running a batch distillation on the sample entered, preferably at atmospheric pressure, the fractionation achieved being sufficiently sharp so that one after another hydrocarbon may be distilled from the column in the order of greater volatility in a substantially pure state as indicated by the vapor temperature measured by the thermocouples; the distilled vapor is collected in an evacuated receiver as already explained and frequent simultaneous readings taken of the proper pressures and the vapor temperature to (3) provide data for the plotting of a fractional distillation curve, (amount of distillate against vapor temperature) from which the percentages of the various hydrocarbons indicated by the flat places on the curve may be calculated. (Figures 2, 3 and 4.)

A single distillation comprises the whole analysis for natural gas or gasoline and usually takes from 2 to 5 or 6 hours with the improved apparatus as contrasted with the time of 6 and even 10 to 14 hours for the older apparatus as stated in the article by Oberfell already mentioned.

In the case of any analytical apparatus and methods a discussion of the errors involved and the means to avoid or render negligible these errors is in order.

Correction for Errors

The apparatus is based on fractional distillation which is more efficient for the separation of compounds with boiling points far apart such as n-butane and iso-pentane than for compounds with boiling points not far removed, as iso-butane and n-butane (Figures 2, 3 and 4). The break between n-butane and iso-pentane is practically vertical while that between iso-butane and n-butane is somewhat gradual. It must be kept in mind that although the separation between iso-butane and n-butane is obviously not quantitative, for purposes of analysis a "cut-point" may be located on the rise of the curve either at the midpoint of the respective boiling points of iso-butane and n-butane (expressed in millivolts times 10 on the scale shown) or by a more precise method to be explained in a later article to determine

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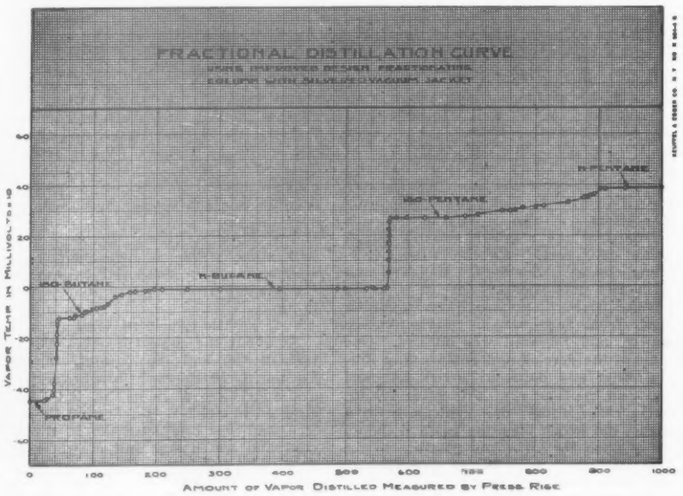
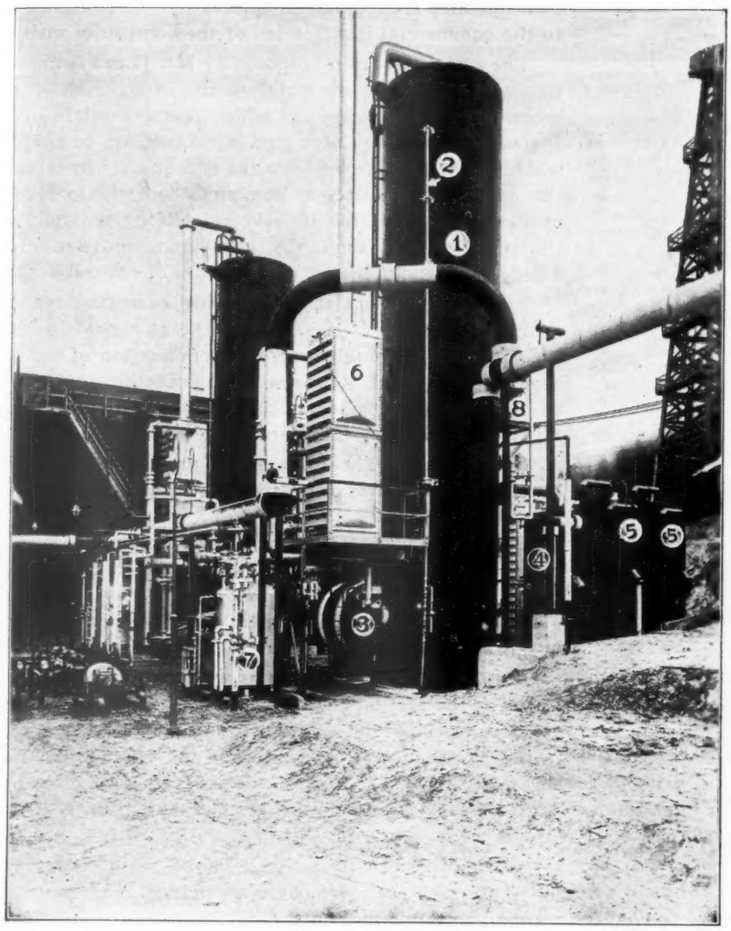


Figure 3—Fractional distillation curve obtained with improved apparatus.

*Research chemical engineer. (The apparatus described in this article was first developed by the writer at the University of Michigan, Ann Arbor, Mich., in 1925-1926, under the guidance of the then Prof. E. H. Leslie, now with Smith-Leslie, Inc., Oil City, Pa. A description of the original apparatus and analytical procedure has been incorporated in the writer's Ph.D. thesis presented to the University of Michigan.)



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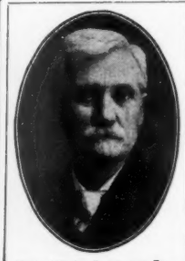

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OPPORTUNITY FOR THE INDUSTRY

The oil industry is again being urged by an outsider to bestir itself to supply a potential market for its products.

A division chief of the Federal Bureau of Roads says in an interview published in this issue of The Oil and Gas Journal that "it is difficult to understand why the oil industry does not begin an effective research program to determine specifications for road oil adaptable to different regions and so create a widespread demand."

A few years ago it was the oil burner manufacturers who were asking the oil industry to take an interest in the standardization of burner oils for domestic heating. Now the oil industry is represented in the Oil Heating Institute and the increasing demand for burning oils is a feature of the petroleum market in the fall and winter months.

Was there ever an industry so frequently helped to new and wider markets for its products by the manufacturers of consuming devices? Even the great gasoline market was virtually handed to the oil industry by the development of the automotive industry.

The oil industry has been kept so busy supplying the ever-growing demand for petroleum products that it has not been compelled to give much attention to the development of new markets. But in the past few years the overproduction of crude and the accumulation of stocks has begun to change this attitude.

Greater interest has been shown in the possibilities of new products from petroleum and individual companies have established research departments designed to discover new products or new markets for old products.

A hint like that offered by Mr. James of the Bureau of Public Roads is assured a ready response.

But his suggestion should do more than interest a few companies in investigating his proposal. If there is the possibility as he says of enlarging the market for road oils to 24 times its present size it is of enough importance to enlist the active co-operation of the research forces of the whole industry.

The suggestion was advanced in The Oil and Gas Journal several years ago for the creation of a National Council for Petroleum Research to develop new products and new uses for new and old products of petroleum.

The subject was taken up by the American Petroleum Institute and the National Research Council, and an elaborate program for research in fundamental problems has been under way for some time but this work has been largely in the line of pure research as distinguished from practical application which has been left mainly to the commercial laboratories of the companies maintaining them.

The sort of research proposed by Mr. James is immediately practical with definite commercial results in sight and big enough and broad enough to engage the whole research talent of the industry. Instead of wasting labor and resources in competitive research would it not be more businesslike and quicker in securing results if the petroleum industry at this time had such a National Council of Petroleum Research to devote itself immediately to supplying the specifications sought by Mr. James and needed by the road builders and maintenance departments of the public highways?

The profitableness of research has been demonstrated time and again in other industries. What the electrical industry has been accomplishing through the great combination of research forces is seen on every hand. One need not go further than the development of the great radio industry threatening to rival the automotive industry in universal adoption.

Or take coal. The story of the great company which has made Pittsburgh the center of the by-product coking industry is a modern miracle.

To the unimaginative coal is anything but romantic but out of research into the possibilities of by-products from coal there has grown an immense corporation which in the 13 years since a small group of engineers moved their activities from Chicago to Pittsburgh has virtually revolutionized the by-product coking industry.

A staff of research engineers with a research laboratory is maintained at the Mellon Institute. The Koppers Company, through its research work has developed many inventions, devices and processes in the by-product coking industry and allied industries, including several of interest to the oil industry, notably for the purification of natural gas and gas obtained from cracking units.

What has been accomplished in the coal industry is admitted by scientists to be equally possible in the oil industry. Today we are obtaining only the more obvious products from petroleum, much as we used to think coal good only for burning raw. Yet the number and value of potential products from petroleum is believed to be as great or greater than those from coal.

We have really only begun to use petroleum or to realize its real value.

Take this matter of road oil. Comparatively speaking its use has been so limited as to be almost classed as experimental. The development of a road oil for surface treatment that would tend to make our low type highways dustless and waterproof would open an immense market for petroleum products.

The present road oil bill, Mr. James says, is $10,500,000. It could easily be made $245,000,000, he estimates. That is a market large enough to justify the concerted effort of the oil industry to supply it.

This is but one possibility. The Natural Gasoline Association of America has shown what can be accomplished by joint research. Just as the Oil Heating Institute is promoting the use of oil for domestic heating, offering a wider market for our overproduction, the natural gasoline industry has been developing liquid gas from a fraction of the natural gasoline that is more or less a waste product.

Liquid gas brings to the isolated home or community the convenience of natural gas, opening a market nationwide and bringing to the natural gasoline producer added revenue and the promise of stabilization of his whole market by offering disposal for his surplus.

The natural gasoline industry has also perfected through research a motor fuel specially suitable for aviation.

The development of specifications for mosquito sprays that will be more effective in eliminating the insects and less liable to absorption by vegetation has recently been announced as a result

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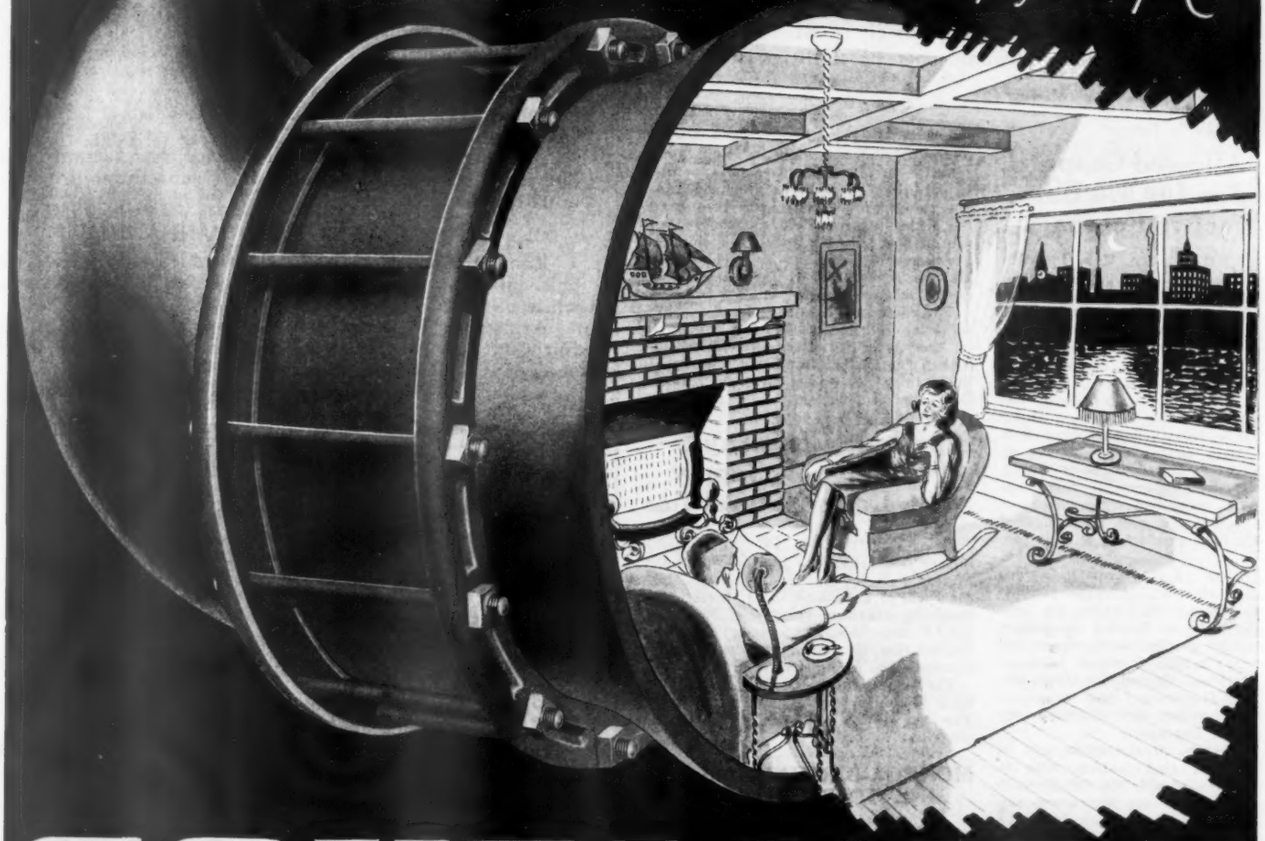

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EDITORIAL

OPPORTUNITY FOR THE INDUSTRY

(Continued from Page 40)

of research by the oil industry. The boll weevil spray has been a practical accomplishment of great value.

The development of dependable fuel for the once scoffed at cigar lighter suggests the possibility of a like device for a household lighter further invading the match industry's domain, perhaps ultimately as profitable to the oil industry.

The expanding uses of paraffin-waxed papers is a notable illustration of growth of an outlet.

But the really valuable markets for petroleum by-products will come with the development of its chemical possibilities, in drugs, solvents and the like.

To discover and develop these a great industry-wide co-operation for research would repay the effort and investment a thousandfold. A National Council for Petroleum Research in which the whole industry would be represented would open possibilities and profits big enough for all to share.

Yates Allowed Output Raised to 100,000 Bbls., Effective February 1

FORT WORTH, Tex., Jan. 14.—The Texas Railroad Commission followed the recommendation of its Yates Pool Proration Advisory Committee and raised the allowed production of Yates to 100,000 bbls. daily effective February 1, following a hearing held in Austin Saturday afternoon. The proposal to raise production from 72,500 bbls. daily was not protested. At the same time proration was extended six months from January 1. When the order goes into effect only 87,500 bbls. will be produced. However, if the producers desire to produce more to meet the requirements of pipe line companies, the remainder of the 100,000 bbls. production will be produced.

At the close of the hearing it was learned the attorney general's department will file an application the first part of the week to dissolve the temporary injunction granted to Murchison Oil Co. and to Cranfill Brothers restraining the Railroad Commission from enforcing the Hendricks Pool proration plan. The temporary injunction was obtained late in December.

Many operators in Hendricks and in West Texas for that matter, were in hopes the case would not be brought up for a hearing. Since Murchison and Cranfill Brothers broke away from the proration plan, proration in the pool has not been seriously disturbed. In as much as no disturbance of consequence developed many of the operators did not care to have the police powers of the commission tested. Many others, however, would prefer to have that test.

Recommend Committee Of Three to Organize Co-operative Drilling

The Committee of Nine recently appointed by the General Mid-Continent Oil and Gas Association met in Tulsa Monday for the purpose of considering ways and means to promote the unitization and co-operative development of oil pools. Those present were: W. C. Franklin, Tidal Oil Co., chairman; William N. Davis, Phillips Petroleum Co.; W. H. Francis, Magnolia Petroleum Co.; W. G. Skelly, Skelly Oil Co.; W. S. Fitzpatrick, Prairie Oil & Gas Co.; Jack Dies, representing W. S. Farish of the Humble Oil & Refining Co.; W. E. Wilson, representing M. J. Grogan, Louisiana Oil Refining Corp.; and J. S. Bridwell, independent producer, Wichita Falls, Tex.

After discussion, the committee resolved to recommend to the board of directors of the general association that a central committee of three be appointed to organize the work of promoting unit and co-operative development throughout the Mid-Continent Field. The more definite plan of securing the co-operation and assistance of producers in each locality will be worked out by the central committee when appointed.

The committee also considered the conservation bills proposed by a committee of the American Bar Association but took no action in advance of mass meetings which are to be held in Kansas, Oklahoma and Texas.

Pipe Line Company Forming to Supply St. Louis Natural Gas

NEW YORK, Jan. 15.—Negotiations for the formation of a pipe line company to transport natural gas from the Monroe Field of Louisiana to St. Louis, Mo., involving Standard Oil Co. of New Jersey, United Gas Improvement Co. and United Gas Co. are under way. Other interests are also believed involved.

The project calls for a 24-inch line running 475 miles at a cost of $30,000,000. The gas is to be sold for industrial purposes.

MONROE-BIRMINGHAM GAS LINE TO BE BUILT SOON

SHREVEPORT, La., Jan. 15.—Julius Naiman, of Arthur L. Mullergren, consulting engineers, who is attending the convention here of the Southwest Division of the Natural Gas Department of the American Gas Association and who has been conducting an industrial survey of the territory and market to be served by the Southern Natural Gas Co. of Birmingham, Ala., with its proposed line from the Monroe and Richland gas fields in northeast Louisiana advises that this survey has proved the project entirely feasible and that surveys and purchase of right of way for the line may begin within the next month or six weeks.

The line will be 24-inch from junction of feeders from Monroe and Richland to Birmingham and 20-inch from there to Atlanta and Chattanooga, the total length approximating 800 miles. With laterals the system will have approximately 1,200 miles of main line with a maximum capacity of around 120,000,000 feet, 400 pounds working pressure. Contracts for 75,000,000 feet daily have been signed by industrial consumers, it is said.

TEXAS-EMPIRE CONTRACT

HOUSTON, Tex. Jan. 14.—The Texas-Empire Pipe Line Co. has let the contract to Williams Brothers of Tulsa, Okla., for the laying of 150 miles of pipe on its Cushing to Chicago. The part to be laid first is about midway on the line extending from a point near Tipton, Mo., to Arenzville, Mo. This will be put down first because of weather conditions.

OSAGE OPERATORS ELECT

At the annual meeting of the Osage Oil and Gas Lessees Association held in Tulsa on January 8, R. F. MacArthur of the Barnsdall Oil Co. was elected president; H. R. Straight, Empire Gas & Fuel Co., vice president; W. C. Franklin, Tidal Oil Co., treasurer; and Harry H. Smith, secretary.

EMPIRE P. L. STATEMENT

The Empire Pipe Line Co.'s statement for December shows receipts of 1,523,042.99 bbls., daily average 49,130.42 bbls.; deliveries, 1,292,148.48 bbls., daily average 41,682.21 bbls.; stocks on December 31, 4,106,853.86 bbls.

HENDRICKS' POTENTIAL LOWER

FORT WORTH, Tex. Jan. 15.—Hendricks Pool's potential production shows a decrease of 39,464 bbls. to 2,616,323 bbls., according to the umpire's semi-monthly report.

High Spots in Field News

MICHIGAN

New well in Muskegon Field estimated 2,000-bbl. producer. Pipe line runs reach 4,500 bbls. for two successive days.

NEW MEXICO

Skelly Oil Co.'s Lea County well flows 165 bbls. for two days, then bailer was run and 40 bbls. of water recovered, probably from leaking casing.

KANSAS

Sedgwick County continues to be state's hot spot, with favorable developments in wells of the Mary Jane Oil Co., T. B. Slick and the Marland Production Co. holding interest.

GULF COAST

Gulf Production Co.'s Fannette Dome well caught fire, apparently sanding up later and cutting production from an estimated 4,000 bbls. to 200 bbls.

Gulf Production Co. well at Big Creek flowed 3,800 bbls.

CALIFORNIA

Barnsdall and Rio Grande Companies' No. 2 Doty, at Elwood, came in flowing 4,000 bbls. of 39 gravity.

Lawndale and Kettleman Hills loom as factors in production. Lawndale may not show substantial production until late in year.

NORTH TEXAS AND PANHANDLE

Tannehill Pool well, Shackelford County, made 1,210 bbls. initially. Believed producing from lower Cooke sand while others are from Tannehill sand.

Armstrong Pool well, Moore County, making 1,108 bbls. initially, was best of week in Panhandle. Gray County showed loss in Le Fors area.

OKLAHOMA

Extension of the Allen Pool 2 miles west indicated by T. B. Slick well in Section 24-5-7, which flowed a head of 105 bbls. in 30 minutes and is expected to be deepened.

Sinclair Oil & Gas Co.'s discovery well in Allen deep-sand area flowed 1,030 bbls. after being deepened 6 feet in the Wilcox to a total depth of 4,166 feet. The well had been shut in since its completion until last week.

WEST TEXAS

Roberts-Settles Pool, Howard County, was extended a mile to southwest by well estimated at 700 bbls.

New wells in Leck and Llano areas, northern Winkler County.

Prairie Oil & Gas Co. well in Hendricks started off at rate of 888 bbls. an hour.

Yates Pool allowable production raised to 100,000 bbls. February 1 but only 87,500 bbls. will be run, maximum outlet at that time.

Southeastern Ward County is coming back into prominence.

Texon Oil & Land Co.'s world's deepest well is still increasing its production, making 1,530 bbls. of 56.3 gravity oil. Gas is also increasing. Texon is planning to drill more deep wells and Big Lake Oil Co. is reported preparing to drill four in the 8,500-foot zone.

Plains Drilling Co.'s well in Lefors area, late reports say, flowed 1,200 bbls. of 41.5 gravity oil in 12 hours.

Hendricks Pool was extended half mile south by Skelly Oil Co. well making 500 bbls.

Tannehill Pool Well is One of the Best

Gain From Shallow Production in Hatchett Pool. Gray County, in Panhandle, Shows Decrease. New Tests in Jack County

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 14.—One of the outstanding completions in North and North Central Texas during the week was Ohio Texas Oil Co.'s No. 10 Matthews, NE SW NW, Section 29, E. T.R.R. Survey, Shackelford County, 2½ miles north of Albany, which made 1,210 bbls. initially from 1,128-49 feet.

The well is in the Tannehill Pool and is believed to be producing from the lower Cooke while the rest of the wells in that area are producing from the Tannehill sand. It is one of the best completions in the pool and will probably be the incentive for a fair sized drilling campaign.

Another Ranger district well attracting interest was Midsun and Foster's No. 2 Hass, 1,600 feet from the south and east lines of Section 71, Block 1, G.H. &H. Survey, Coleman County. It had the Home Creek sand at 1,495 feet and the hole filled with oil. Later it started slopping over and is making small heads. The oil tested 39.9 gravity and the owners estimate it to be a 100-bbl. producer.

In this same county, Shell Petroleum Corp. has announced location for a 4,000-foot test in the northwest of the northeast of the V. M. Newsome tract in the R. Cochran Survey. Geologists are of the opinion the well will reach the Ellenberger lime around contract depth.

Hatchett Pool

A quartet of shallow producers were completed in the Hatchett Pool in Callahan County which is proving a remarkable shallow pool. Production is found around 340 to 350 feet and the wells are averaging around 20 bbls. initially. These shallow producers have been effective in giving Callahan County a small gain in daily average production. Three companies, The Texas Company, Reiter Foster Oil Corp., and Moutray Oil Co., control the acreage.

The Ranger district was off 786 bbls. in daily average production due to sharp drops in production of Brown and Coleman Counties. Both counties suffered from natural decline of old wells and to a great extent because a number of wells were off production for various reasons.

Panhandle Completions

Skelly Oil Co.'s No. 5 Armstrong and Byrd, in the Armstrong Pool of Moore County, was the outstanding well in the Panhandle last week. After a 10 and 20-quart shot in pay at 3,145-53 feet the well made 1,108 bbls. initially. In the same pool, McMan Oil & Gas Co.'s No. 1 Sneed was completed for a 205-bbl. well after a 30-quart shot at 3,097 to 3,110 feet.

Over east, in the Lefors area of Gray County, Skelly Oil Co.'s No. 1 Saunders made 840 bbls. from pay at 2,575-85 feet and was the best completion in the area.

Every county in the Panhandle, with the exception of Gray County, registered increases in production but the loss in Gray County offset the gain and production remained stationary. Gray County's loss was traced to the Lefors area which slumped again.

Jack County Drilling

Jack County remains one of the most interesting spots in the Wichita Falls district. The Bryson area is becoming more prominent in drilling reports and several new tests were spudded last week.

While the wells do not have a high initial production and have to be drilled to around 3,000 feet, the long life production expected in that area is proving a lure to operators. The producing territory apparently will extend over considerable territory. Panhandle Refining Co.'s No. 2 Daugherty is making 67 bbls. daily from pay at 2,965-80 feet and is cleaning out 90 feet off bottom. A map of that area is published in this issue.

Wilbarger County operations have slowed down perceptibly since the first of the year. Sixteen wells were completed in that county last week and 11 were producers with an average initial production of 100 bbls. Production in the county remains about constant.

The Wichita Falls district as a whole registered the biggest decline of any North Texas district when it lost 1,188 bbls.

PANHANDLE COMPLETIONS

Cochran County

Clark & Melat's No. 1 C. C. Slaughter, 1,650 feet from east and 660 feet south of northwest tract, League 118, Knox County School Land, was temporarily abandoned. Marland Oil Co.'s No. 1 Slaughter, located 330 feet from south and west lines, Tract 130, Carson County School Land, was junked and abandoned at 1,530 feet.

Gray County

McMan Oil & Gas Co.'s No. 2 Binkley, 330 feet each way from NW cor. W half SE cor. Section 86, Block 3, I.&G. N.R.R. Survey, swabbed 225 bbls. at the granite wash found at 3,190-3,203 feet and 3,225-32 feet. Skelly Oil Co.'s No. 2 Saunders, 231 feet from south line and 1,127 feet from west line SW, Section 4, Block 1, A.C.H.&B. Survey, made 840 bbls. at the 2,575-85-foot pay. The Texas Company's No. 1 Chapman-B made 180 bbls. at 2,765-70 feet and at 2,820-60 feet.

Hutchinson County

The Badger Oil Co.'s No. 3 Tom Lewis made 50 bbls. at 2,878-91 feet. The Barnum Oil Co.'s No. 1 Sanford, Section 78, Block 46, was shot with 30 quarts at 2,965-3,000 feet and swabbed 25 bbls. of oil and 25 bbls. of water. Barnum Oil Co.'s No. 1 Sanford (Garland) made 20 bbls. of oil and 100 bbls. of water at 2,920-3,030 feet. Continental Supply Co.'s No. 1 Sanford was drilled to a total depth of 3,267 feet, flowed 2,500 bbls. of water at 3,147-3,269 feet, had a small show of oil at 3,020-22 feet, made 40,000,000 feet of gas at 2,560-2,765 feet and was completed as a gas well. Premier Oil & Gas Co.'s No. 1 L. E. Borton, located C NE NW NW, Section 32, Block Y, A.&B.R.R. Survey, was temporarily abandoned.

Moore County

McMan Oil & Gas Co.'s No. 1 Sneed, 2,260 feet south and 330 feet west of northwest corner J. W. Proctor Survey, but in Matilda Robinson Survey, was shot with 30 quarts at 3,097-3,110 feet and made a 205-bbl. well. Skelly Oil Co.'s No. 5 Armstrong & Byrd, 2,260 feet south and 330 feet east of northwest corner J. W. Proctor Survey, was shot with 10 quarts at 3,145-52 feet and with 20 quarts at 3,145-53 feet and had an initial production of 1,108 bbls.

Wheeler County

Chapman & Morgan's No. 1 Hatcher, NW cor. SW SE, Section 63, Block 17, H.&G.N.R.R. Survey, was dry and abandoned at 715 feet. Lone Star Co.'s No. 2 Stuckey, located C W half SE SW, Section 92, Block 17, H.&G.N.R.R. Survey, made 8,500,000 feet of gas at 1,873-1,965 feet. Upham Gas Co.'s No. 1 Trostle made 29,000,000 feet of gas at 1,850-1,925 feet. J. O. Whittington's No. 2 Williams & Laycock made 50,000,000 feet of gas at 1,900-2,000 feet and was drilled to a total depth of 2,012 feet.

RANGER COMPLETIONS

Week Ended January 12

Brown County

Anderson and others' No. 1 Wheeler was dry and abandoned at a total depth of 2,327 feet. Atlantic & Bartles' No. 1 Tungate was dry and abandoned at 2,044 feet. Barnsdall's No. 1 Debusk was dry and abandoned at 2,252 feet. Young Brothers, Alexander & Woodley Petroleum Co.'s No. 17 Hickman made 60 bbls. at 1,239-57 feet. Their No. 19 Hickman made 75 bbls. at 1,240-53 feet. Olvey & Robbins' No. 1-A Nash was dry and abandoned at 1,520 feet.

Callahan County

Dickey Oil Co.'s No. 1-24 Williams was dry and abandoned at 442 feet. Gibson & Johnson's No. 1 Hughes was dry and abandoned at 800 feet. Humble Oil & Refining Co.'s No. 2-B Head Brothers was dry and abandoned at 2,085 feet. Mack's No. 1 Griggs was dry and abandoned at 949 feet. Moutray Oil Co.'s No. 7 Hatchett made 10 bbls. at 342-51 feet. Its No. 8 Hatchett made 15 bbls. at 342-55 feet. Its No. 9 Hatchett made 19 bbls. at 341-55 feet. Reiter Foster Oil Co.'s No. 16 Hatchett was dry and abandoned at 358 feet. Its No. 17 Hatchett made 40 bbls. at 342-43 feet. The Texas Company's No. 16 Hatchett was dry and abandoned at 392 feet.

Comanche County

Man-Tex Oil Corp.'s No. 1 Gardenshire made 35 bbls. at 2,755-71 feet.

Coleman County

Jamison & Pollard's No. 1 Thate was dry and abandoned at 745 feet. Carter's No. 1 Kingsberry was dry and abandoned at 1,378 feet. Continental Atlantic and others' No. 3 Overall made 100 bbls. at 2,124-28 feet, total depth of 2,133 feet. Independent Oil & Gas Co.'s No. 4 Overall made 50 bbls. at 2,134-36 feet. Samuels and others' No. 1 Robertson was drilled to a total depth of 1,224 feet, plugged back to 1,068 feet, shot with 10 quarts at 1,046-56 feet and made 20 bbls. oil and 7 bbls. water. Wilson and others' No. 1 Polk Brothers was dry and abandoned at 1,475 feet.

Eastland County

Mook-Texas Oil Co.'s No. 5-B Casey was junked and abandoned at 3,250 feet. Texas Pacific Coal & Oil Co.'s No. 4 fee land was dry and abandoned at 1,215 feet.

Shackelford County

Cranfill & Reynolds' No. 1-C Flippen made 7 bbls. at 897-99 feet. Cranfill & Reynolds' No. 2-C Flippen made 10 bbls.

(Continued on Page 134)

NORTH TEXAS
Estimated Daily Average Production
Week ending January 12

	Bbls.
Panhandle district—	
Carson County	5,885
Gray County	21,525
Hutchinson County	27,905
Moore County	2,410
Potter County	20
Wheeler County	850
Total this week	58,595
Total last week	58,605
Decrease	10
Wichita Falls district—	
Archer County	17,985
Baylor County	81
Clay County	470
Cooke County	2,433
Jack County	1,865
Montague County	7,355
Throckmorton County	695
Wilbarger County	29,137
Young County	7,803
Wichita County	28,795
Total this week	96,619
Total last week	97,807
Decrease	1,188
Ranger district—	
Brown County	9,315
Callahan County	3,680
Coleman County	3,330
Comanche County	1,220
Palo Pinto County	400
Ranger	5,731
Shackelford County	11,420
Stephens County	7,176
Total this week	42,272
Total last week	43,058
Decrease	786
Grand total this week	197,486
Grand total last week	199,470
Decrease	16

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week ended January 12

Company, Well, Farm, Name, Section and Block—	Remarks—
CARSON COUNTY	
Denson et als' No. 1 W. E. Cobb, 930 ft. from N line, 280 ft. from E line, W½ NW, Sec. 184, Blk. 2, I.&G.N. Sur.	Drlg. 865 ft.
Duncan & Reiger's No. 1 J. B. Hodges, 330 ft. from E line and 330 ft. from S line, W½ NW, Sec. 112, Blk. 7, I.&G.N. Sur.	Rig on ground.
Holmes et als' No. 1 Quinn, 330 ft. from S and 330 ft. from E line SW, Sec. 7, Blk. 9, I.&G.N. Sur.	Rig.
Magnolia Pet. Co.'s No. 6 fee No. 244, 660 ft. from N line and 660 ft. from E line E½, Sec. 91, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 3,030 ft.
Morris et als' No. 1 Barnard, NW cor. SW SE, Sec. 44	Fishing 880 ft.
Navajo Oil Co.'s No. 2 Poling, 660 ft. from W and 330 ft. from N lines, N 30 ac. SW, Sec. 22, Blk. X-2, T.T.R.R. Sur.	Drlg. 3,310 ft.
Reynolds et als' No. 1 E. Cooper, 330 ft. from S line and 330 ft. from E line NW, Sec. 5, Blk. 9, I.&G. N.R.R. Sur.	Drlg. 1,310 ft.
Spartan Oil Co.'s No. 1 S. Bednorz, NW cor. E½ NW, Sec. 202, Blk. 3, I.&G.N. Sur.	Rig burned 2,165 ft. and S.D.
Skelly Oil Co.'s No. 10 Schafer, 1,320 ft. from W line and 330 ft. from S line of N½, Sec. 188, Blk. 3, I.&G.N.R.R. Sur.	S.D. 2,400 ft.
Stubblefield et als' No. 1 Cooper, 340 ft. N and 330 ft. W line SE, Sec. 5, Blk. 9	Drlg. 2,807 ft.
Travis et als' No. 1 D. A. Harrell, C NE NE, Sec. 162, Blk. 7, I.&G.N. Sur.	Fish. 2,510 ft.
Ware et als' No. 1 Ware, 990 ft. S and 400 ft. E NW cor. Sec. 18, Blk. 3, A.B.&M. Sur.	S.D. 2,202 ft. for wtr.
CASTRO COUNTY	
Colorado O. & R. Co. No. 1 M. Slemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur.	S.D. 510 ft. for csg.
CHILDRESS COUNTY	
C. L. Sloane et als' No. 1 B. P. Smith, Sur. 49, F. P. Knott lands	S.D. 4,005 ft.
The Texas Co.'s No. 1 Smith, 100 ft. each way from NW cor. Sec. 174, Blk. H, W.&N.W. Sur.	Hole full sulphur wtr. 3,985 ft; S.D. 4,605 ft.
COCHRAN COUNTY	
Clark & Melat's No. 1 C. C. Slaughter, 1,650 ft. E and 660 ft. S of NW tract, League 118, Knox County School land	Rig blown down.
Marland Prod. Co.'s No. 1 C. C. Slaughter, 330 ft. from S and W lines, Carson County School land, Tr. 130.	Fish. 1,550 ft.
COTTLE COUNTY	
Explth. Co.'s No. 1 Richards	Drlg. 1,650 ft.
Explth. Co.'s No. 4 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur.	Fish. 2,940 ft.
Skelly Oil Co.'s No. 1 J. H. Cannon	H.F.W. 3,558 ft; drlg. 3,965 ft.
Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2,460 ft. E NW cor. Sec. 551, Blk. H, W.&N.W. Sur.	Drlg. 3,441 ft.

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Roberts-Settles Pool Again Extended

Well Estimated Good for 700 Bbls. a Mile to Southwest. New Wells in Leck and Llano Pools. More Deep Tests for Big Lake

By James H. Dameron
Staff Correspondent, West Texas Fields

FORT WORTH, Tex., Jan. 14.—Plymouth Oil Co.'s No. 1 Kloh-Rumsey, SE NE SW Section 5, Block 32, Township 2s, Howard County, extended the producing area of the Roberts-Settles Pool in Howard County about a mile to the southwest Monday when the well topped pay at 2,264 feet. It was drilled to 2,298 feet and 1,900 feet of oil rose in the hole. The well is estimated to be good for around 700 bbls.

Top of the pay in this well is 462 feet above sea level, compared with 500 feet in the American Maracaibo Co.'s discovery well to the northeast. Both are producing from the 2,200-foot lime zone opened by the discovery well which also extended the Roberts Pool to the west. The oil in Plymouth company's well tested 33.5 gravity and no water is showing.

With only 38 feet difference in the tops of pay in the discovery and extension wells the Settles extension of the Roberts Pool appears to have greater potentialities. A plat showing ownerships and development in this area was published on page 40 of The Oil and Gas Journal January 10.

Marland Oil Co. and Texon company's 1,600-foot eastern extension well, No. 4 Settles in Section 133, Block 29, pumped 1,440 bbls. Saturday, and No. 6 Settles in Section 6, Block 32, pumped 444 bbls. on the same day.

Plymouth company's well may be deepened the latter part of the week. It is being cleaned out and may be given a swab test early this week. The extension will not likely cause an unusual amount of drilling in that immediate territory as the leases are in large tracts.

Leck and Llano Wells

The Leck and Llano Pools in northern Winkler County each had new wells added to them during the past week, and the latter pool is holding more interest with the completion of the best of its three producers. Magnolia Petroleum Co.'s No. 1 Scarborough, NW cor. NE SE Section 1, Block C-22, is the best completion thus far in the Llano Pool. At 3,018-30 feet the well flowed by heads and made 310 bbls. Its production fell rather rapidly and for the 24 hours ending Sunday morning it flowed 160 bbls.

The other two producers made around 80 bbls. each initial. Magnolia company's well is running around 80 feet higher than the other two wells and the oil tested 37.1 gravity. Material is being moved in for three offsets. Shell and Llano are offsetting it to the west and starting another test about half a mile northeast. Gulf company will drill a north offset.

Magnolia company is reported to be planning an extension of its Hendricks Field gathering system on north to the Llano Pool. Humble Pipe Line Co. has a 4-inch line running north from the Llano Pool west to the Leck Pool.

Shell Petroleum Corp. and Danciger Oil & Refining Co.'s No. 1 Daugherty, SW NE Section 3, Block 74, is the fifth producer in the Leck Pool. It blew in at 3,134 feet and on its last gauge made 942 bbls. It is estimated around 15,000,000 feet of gas.

Half a mile south of the southern productive limits of Hendricks, Skelly Oil Co.'s No. 1 Hendricks, C NW SE Section 10, Block B-12, is bidding to extend the pool southward. At 2,990 feet the well had a showing of oil and is being drilled ahead.

Another big well was added to the southern end of Hendricks when Prairie Oil & Gas Co.'s No. 4 Cowden, SW cor. Section 3, Block B-12, started off flowing at the rate of 888 bbls. hourly from pay at 2,905 feet. The well made 444 bbls. the first 30 minutes. At that rate it would make 21,312 bbls. daily.

In the Yates Pool, Gulf Production Co.'s southern extension, No. 13 Smith-B, Section 22, Block 194, has been deepened to 1,511 feet and made 606 bbls. in one hour on a proration test. It is to be drilled deeper.

The Railroad Commission raised the allowable production of Yates to 100,000 bbls., effective February 1, following a hearing held at Austin Saturday. However, only 87,500 bbls. daily will be run at that time because that is the maximum available market outlet. Should the outlet expand within the next month the maximum allowed production will be allowed.

George Anderson and associates' No. 1 University, Section 11, Block 17, Pecos County, and about 8 miles southwest of Yates, has been deepened 3 feet, but conflicting reports are made on the well. One reliable authority reported the well spraying 7 bbls. of oil and making 7,000,000 feet of gas from a total depth of 1,967 feet. Another reliable source reported the well making mostly sulphur water.

Southeastern Ward County

Southeastern Ward County is coming back into prominence and two new locations have been announced for that area. On the section on which the discovery well is located, Atlantic Oil Producing Co. and Delmar have a location for No. 1 Hazlett, 150 feet from the E cor. of the W half Section 17, Block 5. J. L. H. Oil Co. has made location for No. 1 Hazlett, 150 feet from the N cor. of the SW Section 17, Block 5.

Atlantic company and Delmar are reported to have pooled their acreage in Ward County in the vicinity of the Shipley and others' 100-bbl. wildcat producer. According to the same reports, Shipley and associates are planning the construction of a refinery at Monahans in the event sufficient production is developed on their leases.

Big Lake Deep Tests

Within a short while the Big Lake Pool in Reagan County will be the scene of a deep well drilling campaign that will last over a period of many months. Texon Oil & Land Co.'s No. 1-B University, a 8,525-foot producer, is still climbing in production and at the first of the week was making 1,530 bbls. of 56.3 gravity oil daily. The gas also is increasing.

Texon company is planning to drill more deep wells and the Big Lake Oil Co., major producer in the pool, is to drill four 8,500-foot wells. Unverified reports from the field early this week were that the latter company was purchasing a $160,000 combination rotary and cable tool rig for use in the development of the 8,500-foot zone.

Big Lake company is carrying one of its old wells deeper and has made location for three deep wells described as follows: No. 1 University-C, 2,109 feet from the south line and 920 feet from the east line, Section 1, Block 2; No. 2 University-C, 2,598½ feet south of the north line and 250 feet west of the east line, same section, and No. 3 University-C, 625 feet from the north and 250 feet from the east lines of Section 1, Block 2. Texon Oil & Land Co. is rigging up No. 61 University, Group 1, at 3,900 feet and will drill it on down.

Tank car shipments out of West Texas fell off rather sharply during the first week in January and runs to storage jumped to 59,244 bbls. daily as a result. At the same time pipe line movements increased approximately 10,000 bbls. daily while production was up approximately 6,000 bbls. Tank car shipments fell off 15,696 bbls. daily to 29,940 bbls. daily. American Pipe Line Co., Shell Pipe Line Co., Skelly Oil Co. and The Texas Company all showed decreases in tank car shipments. Southern Crude Oil Purchasing Co. was the single exception, showing a 3,000-bbl. increase.

Production Gain

West Texas production made another gain according to last week's estimates due largely to the increase in Howard County as a result of new wells adding considerable flush to that area.

WEST TEXAS
Estimated Daily Average Production
Week ended January 12

County—	Wells	Prods.
Crane County	272	37,476
Crockett County	47	2,588
Ector County	2	1
Fisher County	7	885
Glasscock County	18	896
Howard County	228	36,261
Jones County	58	6,390
Loving County	8	254
Mitchell County	142	2,552
Pecos County	283	73,228
Reagan County	233	18,512
Runnels County	3	165
Scurry County	5	31
Upton County	261	13,593
Ward County	1	100
Winkler County	508	166,045
Total this week		359,084
Total last week		353,273
Difference		5,731

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended January 12

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co.'s No. 1 Hostetler, 2,310 ft. N and W of SE cor. Sec. 20, Blk. A-46	Hole full water 1,390 ft.; underreaming 10-in. casing; drlg. 1,865 ft., anhydrite.
BORDEN COUNTY	
Condor Oil Co.'s No. 1 E. A. Hall, 1,650 ft. S and W of NE cor. Sec. 5, Blk. 32, Twp. 3n, T.&P. Sur.	Top salt 1,235 ft.; set 6-in. casing 1,805 ft.; fishing 3,777 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T. & P. Sur.	Location.
BREWSTER COUNTY	
E. W. Bateman et al's No. 1 Nevill, 2,000 ft. from S line and 1,000 ft. from W line of Sec. 64, Blk. 13, G.H.& S.A.R.R. Sur.	Fishing 1,130 ft.
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 4, Blk. G-15, G.C.&S.F.	Rigged up and shut down.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,530 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,145 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 1,150 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
Williams and others' No. 1 Poncey, 459 ft. S and 1,062 ft. E Sec. 26, Blk. 214, T.&St.L.R.R. Co.	Shut down 515 ft.
COKE COUNTY	
Cates & Dennis' No. 1 Mimms, 2,500 ft. S and 330 ft. E of NW cor. Sec. 47, Blk. 4, T.&P. Sur.	Shut down 1,465 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 2,860 ft.
Louisiana O. & R. Co.'s No. 1 Powers, 745 ft. S and 2,310 ft. E of NW cor. Sec. 156, Blk. 2	Hole full water 2,980 ft.; underreaming casing 3,373 ft.; drlg. 3,530 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C.	Drlg. 2,915 ft.
CONCHO COUNTY	
Exploration Co.'s No. 2 Hartgrove, 900 ft. S and 985 ft. E of NW cor. Johann Scheuch Sur. No. 240	Rig.
Loyd Jones Co.'s No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,878	Shut down 150 ft.
Posey's No. 1 Elvidge, C NW Sec. 39, H.&T.C.R.R. Sur.	Shut down 300 ft.
CRANE COUNTY	
Duffey and others' No. 4 Cowden, 1,320 ft. S and 440 ft. W of Sec. 18, Blk. X, C.C.S.D.&R.G.N.G.	Rigging up.
Gulf Prod. Co.'s No. 7 Crier-McElroy, 330 ft. N and E of SW cor. Sec. 196, Blk. F, C.C.S.D.&R.G.N.G. Sur.	Drlg. 2,650 ft.
Gulf Prod. Co.'s No. 59 Crier-McElroy, 330 ft. S and E of NW cor. Sec. 195, Blk. F, C.C.S.D.&R.G.N.G. Sur.	Top salt 1,110 ft.; drlg. 2,650 ft.
Gulf Prod. Co.'s No. 6 Waddell, C NW NE Sec. 12, Blk. B-25	Drlg. 650 ft., salt.
CROCKETT COUNTY	
Barbara Oil Co.'s No. 1 Cox, 237 ft. S and 1,190 ft. E of NW cor. R. B. Dickenson Sur.	Show gas 1,000 ft.; shut down 1,290 ft.; flowing water.
Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor. Sec. 33, Blk. 1, I.&G.N. Sur.	Shut down 80 ft.
W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.R. Sur.	Cleaning out 1,719 ft.
W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur.	7,000,000 ft. gas at 1,663 ft.; shut down 1,690 ft.; small oil show.
Moncrief, Zoch et al's No. 1 J. H. Tippett, 330 ft. from C NE line Sec. 45, Blk. 31, H.&T.C.R.R. Sur., but in Sec. 1, Blk. JH	Top salt 640 ft.; top lime 1,425 ft.; drlg. 1,530 ft.; 300 ft. sulphur water.

(Continued on Page 89)

WEST TEXAS COMPLETIONS
Week Ended January 12

Borden County

Mid-West & Shaffer's No. 1 Tom Good, in Section 39, Block 31, Township 4n, T.&P.R.R. Survey, location was abandoned.

Edwards County

Gale Oil Co.'s No. 1 Jernigan, 1,002 feet from north and 741 feet from west line of Section 2, G.C.&S.F.R.R. Survey, was dry and abandoned at 4,005 feet.

Howard County

American Maracaibo Co.'s No. 1-B Settles, located 330 feet from south and 1,650 feet from west of Section 135, Block 29, had an initial production of 540 bbls. at 2,933-43 feet. F. H. E. Oil Co.'s No. 10 Roberts-B, located 330 feet from north and 2,310 feet west of Section 137, Block 29, topped the pay at 2,955 feet, was drilled to a total depth of 2,964 feet and had an initial production of 76 bbls. hourly. Louisiana Oil & Refining Co.'s No. 3 Settles, located 330 feet from north and 2,306 feet from west of Section 6, Block 32, Township 2s, was shot with 230 quarts at 2,250-2,302 feet and had an initial production of 900 bbls. Marland-Texon Oil Co.'s No. 6 Settles-A, located 2,266 feet from north and 2,513 feet from west of Section 6, Block 32, Township 2s, T.&P.R.R. Survey, had an initial production of 400 bbls. at 2,200-2,220 feet. Texon Oil & Land's No. 1

(Continued on Page 140)

Refiners who have been skimming crude oil in quantity may well view with alarm the prospect of an advance in the price of crude oil But refiners equipped with the Dubbs Cracking Process can "port their helm" slightly and without the slightest change in mechanical equipment continue to produce maximum premium gasoline from drug-on-the-market fuel oil, with only coke or a clean liquid residue fuel oil as a by-product—and continue the refinery profits which the operation of their Dubbs units is accustoming them to rely on

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Allen Pool Is Extended by Slick Well

No. 1 Wyeka Has Hole Full of Oil and Awaits Tankage. Sinclair Discovery, 2½ Miles Northeast, Flowing 1,030 Bbls. Daily

By Thomas F. Smiley

Production of the Allen deep-sand pool was extended about 2 miles the last week by T. B. Slick's test, No. 1 Wyeka, in Section 24-5-7, which on Monday was waiting for erection of tankage after topping the pay at a depth of 4,374 feet and drilling 2 feet further to a total depth of 4,376 feet. The hole was full of oil. There was some question among operators as to whether the sand entered was the Simpson or the top of the Wilcox.

Interest in this well is heightened by the fact that 2½ miles northeast of it is the Sinclair Oil & Gas Co.'s discovery well in the Allen deep-sand area, Amos B-2, SE cor. NE SW Section 7-5-6. The Sinclair well went into the Wilcox at a depth of 4,158 feet and upon going 2 feet deeper the well started flowing 37 bbls. an hour. It was shut in and was kept shut in till last week, when it was drilled 3 feet deeper. It then flowed 930 bbls. in 24 hours. Upon being drilled still another 3 feet to a total depth of 4,166 feet the flow was increased further, and in the 24-hour gauge ending at 7 o'clock Monday morning of this week the well did 1,030 bbls.

The new Slick well and the productivity of the Sinclair well as revealed by throwing it open are expected to lead to fresh drilling activity in this hitherto unproven part of the Allen deep sand area.

Skelly Gets a Well in Maud Area

The Skelly Oil Co. got a good well Sunday in the Maud area, when its No. 1 Lingefelt, drilled to a total depth of 4,131 feet in the Misener sand, which it had topped at 4,130 feet, blew out the tools and began flowing at the rate of 2,122 bbls. a day.

An Osage County semiwildcat which had been watched, No. 1 Stewart of the Producers & Refiners Corp. and the Peters Petroleum Co., in SE cor. NW, Section 11-26-8, was reported producing 110 bbls. of fluid Monday, half water and half oil. The Minnehoma Oil & Gas Co. did some drilling in the neighborhood of this well seven years ago without getting production on a commercial scale. The new well is in the Burgess sand, which it struck at 2,142 feet, drilling on to a total depth of 2,160 feet.

The Indian Territory Illuminating Oil Co. and Foster Petroleum Co.'s No. 1 Trosper, C NE SW, Section 13-11-3w, was still flowing naturally early this week, with the tools in the hole. The Sunday morning gauge showed a flow of 5,713 bbls. in 24 hours.

Production in the Greater Seminole area showed a slight rise as compared with the preceding week, the 24-hour gauge taken at 7 o'clock Monday morning showing 283,881 bbls., as compared with 276,829 bbls. for the same period the week before. Sunday morning's gauge showed 286,139 bbls.

Carter County

Magnolia Petroleum Co. has built the rig for No. 4 N. Hardin, NE cor. SW SE, Section 18-1s-3w. Atlantic Oil Producing Co. is erecting the rig for No. 3 Eason, SE cor. Section 19-1s-3w. Magnolia Petroleum Co.'s No. 3 Winters, SE cor. SW SE, Section 19-1s-3w, has been abandoned at 4,820 feet.

Grady County

Meridian Gas Co. is moving the tools in for No. 2 Glover, SE cor. NW NE, Section 27-5-8w. Champlin Oil & Refining Co. is moving the tools in for No. 2 Kerns, SE cor. SW SW, Section 13-4-8w. Magnolia Petroleum Co.'s No. 9 S. Farwell, NW cor. SE, Section 23-5-8w, has been completed for 22,000,000 feet of gas at 2,300 feet.

Kay County

Tidal Oil Co.'s No. 2 Cole, C SE SE, Section 18-29-1, is drilling deeper at 3,316 feet. Wilson and others' No. 1 Gilbert, CEL NW, Section 24-27-1, has been shut in for 500,000 feet of gas in lime at 745-75 feet.

Kiowa County

G. B. Cloyes' No. 1 Ivy, SW cor. NE, Section 34-7-17w, is rigging up. Joe Ray is moving a spudder in for No. 1 Level, SE cor. NE, Section 11-6-17w, Gotebo Pool. Burke & Son moved a spudder in for No. 1 Copple, NW cor. SE, Section 33-6-17w.

Lyons & Worley's No. 1 Stone, SE cor. NE, Section 12-6-17w, has been abandoned at 585 feet. Burke and others' No. 1 Fox, NE cor. NW SE, Section 5-6-16w, is dry and abandoned at 650 feet. Ford, Foster & Duncan's No. 1 Finney, NW cor. SW SW SW, Section 8-6-16w, has been abandoned at 490 feet. Frank Ketch's No. 1 Malernee, SW cor. SE, Section 11-6-15w, is a dry hole at 490 feet.

Muskogee County

J. A. Swindler has a machine at the location for No. 1 Jefferson, NE cor. SE, Section 7-15-15. Sikes and others' No. 1-A Jackson, SE cor. NW SE, Section 9-15-15, is a machine on the location. Gypsy Oil Co.'s No. 4 Sanders, NW cor. SW SW, Section 34-15-18, is drilling deeper at 1,712 feet. Smith & Durham's No. 1 Williams, NE cor. NW, Section 19-13-19, made 4,000,000 feet of gas in sand at 766-800 feet.

Logan County

Shell Petroleum Corp. made location for No. 5 Sebranek, NW cor. SE NE, Section 30-19-4w. No. 3 Freelove, SW cor. NW SW, Section 17-19-4w, Roxana Pool, has been abandoned at 3,147 feet.

Noble County

Wirt Franklin Oil Corp.'s No. 1 Irwin, SE cor. NW, Section 20-21-1w, has been abandoned at 5,367 feet.

Okfuskee County

The Prairie Oil & Gas Co. made location for No. 1 Palmer, NW cor. NE, Section 2-11-9. F. D. Misener and others' No. 2 Johnson, NW cor. SW NE, Section 2-10-11, is drilling at 580 feet. Atlantic Oil Producing Co. made location for No. 5 Simmons, SE cor. Section 11-10-11.

Atlantic Oil Producing Co. made location for No. 2 Micco, SW cor. Section 12-10-11. J. S. Cosden Co. has the rig up for No. 4 Barnett, NW cor. SW SW, Section 19-11-11. Champlin Oil & Refining Co. made location for No. 6 Washington, SW cor. NE SE, Section 15-11-11.

W. L. Umburn's No. 7 Simmons, CNL NE SE, Section 11-10-11, made a 30-bbl. well in sand at 1,988-2,006 feet. Atlantic Oil Producing Co.'s No. 1 Micco, NW cor. SW SW, Section 12-10-11, made 80 bbls. from sand at 1,609-80 and 2,063-73 feet. Champlin Oil & Refining Co.'s No. 1 Jacobs, NW cor. SW SE, Section 12-11-11, was completed for 200 bbls. in sand at 3,480-92 feet.

Okmulgee County

Simms Petroleum Co.'s No. 7 Dunn, NE cor. NW NE NE, Section 21-13-12, is drilling at 890 feet. Curtis Oil Co.'s No. 2 Fisher, SE cor. NW NE, Section 12-15-12, is dry and abandoned at 1,2[illegible] feet. The Texas Company's No. 10 Sellers, CSL SE NE, Section 20-15-14, made 25 bbls. from sand at 1,297-1,315 feet. Unger Brothers' No. 8 Harrison, C SE SW, Section 24-15-14, is a dry hole at 1,650 feet. Taylor & Geiger's No. 1 Smith, SW cor. Section 36-14-14, has been abandoned at 1,306 feet.

Sheldon Oil Co.'s No. 1 Williams, NW cor. SW SE, Section 14-14-11, is dry and abandoned at 2,773 feet. Shaffer Oil & Refining Co. and others' No. 1 Bell, SW cor. NE, Section 30-14-12, has been abandoned at 2,877 feet. J. H. Rebold Oil Co.'s No. 6 Williams, NE cor. NW NE, Section 22-13-12, made 30 bbls. from sand at 2,878-2,900 feet. Alex Massey's No. 6 Rentie, CSL SW SW, Section 1-13-11, is dry and abandoned at 2,680 feet. Tidal Oil Co.'s No. 1 Fisher, SE cor. NW NW, Section 7-12-12, has been abandoned at 2,940 feet.

Osage County

Continental Oil Co. made location for No. 1, SW cor. SE, Section 31-24-8. Tidal Osage Oil Co.'s No. 2, SW cor. NW, Section 4-23-9, is preparing to deepen from 2,163 feet. Devonian Oil Co. and Billingslea's No. 1, NE cor. NW, Section 6-23-9, is a machine moving in. W. C. Elliott made location for No. 1, SE cor. NE SE, Section 33-22-11.

Empire Oil & Refining Co.'s No. 24 NE cor. SW NE, Section 12-25-5, is dry and abandoned at 3,265 feet. Peters Petroleum Co.'s No. 8, C NW, Section 26-25-9, made 50 bbls. from Bartlesville sand at 2,176-2,251 feet. Atlantic Oil Producing Co.'s No. 1, NE cor. SW NE, Section 19-24-8, swabbed 30 bbls. from Wilcox sand at 2,835-50 feet after deepening to 3,072 feet and plugging back. Plains Petroleum Co.'s No. 1, SE cor. SW SW, Section 32-21-11, is a dry hole at 1,716 feet. Devonian Oil Co.'s No. 2 NE cor. SE SE, Section 10-20-11, made 15 bbls. from Wilcox sand at 2,283-2,310 feet.

Stephens County

Sparks, Prince and others made location for No. 1 Hodgecox, NW cor. NE, Section 29-2-5w. Twin State Oil Co. has the rig up for No. 2 Cole, SE cor. NE NE, Section 14-1s-4w. Ridgeway and others are moving the tools in for No. 1 Regan, SW cor. SE SE, Section 15-2s-6w.

American Pipe Line Co.'s No. 3 Nigh, NW cor. SE NW, Section 34-1s-8w, is dry and abandoned at 2,230 feet. Schermerhorn and others' No. 5 Shields, SW cor. NE SW, Section 13-1s-4w, made 75 bbls. from sands at 2,848-2,906 feet. Kidney and others' No. 1 Dare, SE cor. SW NW, Section 1-2s-8w, has been abandoned at 2,246 feet.

Wagoner County

Horner and others moved a machine in for No. 2 Barnett, NE cor. SW SW NE, Section 34-18-17. C. A. Devassard and others' No. 1 Sier, NW cor. SE, Section 10-18-15, is dry and abandoned at 1,177 feet.

Garvin County

W. R. Ramsey made location for No. 1 Malickey, C SW NE, Section 32-1-3.

Pontotoc County

La Salle Oil Co. has the rig on the ground for No. 3 Bumpers, E cor. NE NE, Section 31-5-5. Louisiana Oil Refining Corp. has built the rig for No. 18 Perry, NE cor. NW NE, Section 19-5-8, Allen Pool. W. R. Ramsey is erecting

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

Company, farm and location—	Remarks:
LATTIMER COUNTY	
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18	1,000,000 ft. gas 1,695-1,705 ft.
GRANT COUNTY	
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w	Shut down 5,640 ft.
Lario-Lathrop's No. 1 Cornell, NW cor. NW Sec. 24-28-3w	Drlg. 1,545 ft.
HARPER COUNTY	
Hoffer Oil Co.'s No. 1 Cooper, NW cor. SE SE Sec. 12-25-22w	Shut down 4,130 ft.
KAY COUNTY	
Geo. L. Miller and others' No. 1 Home, NW cor. SE Sec. 11-24-3	Dry and abandoned at 4,031 ft.
Lario Oil Co.'s No. 1 McKay, NW NE Sec. 14-29-1	Dry and abandoned 3,890 ft.
Wentz Oil Corp.'s No. 1-A Ward, C NW SE SW Sec. 32-27-1e	Drlg. 350 ft.
WOODWARD COUNTY	
Otstot Development Co.'s No. 1 Simmons, SE cor. SE Sec. 32-24-17w	Dry and abandoned 1,490 ft.
Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25-21-21w	Rig blown down, 3,025 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w	Casing 1,553 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w	Shut down 1,910 ft.
Farrond and others' No. 1 Johnson, SW cor. SW Sec. 1-23-17w	Underreaming 1,560 ft.
GARFIELD COUNTY	
E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 4,755 ft.
Marland and Barnsdall's No. 1 Looman, NE SE Sec. 9-20-4w	Dry and abandoned 5,735 ft.
Marland Oil Co.'s No. 1 Miller, SW cor. SW Sec. 12-20-4w	Dry and abandoned 4,675 ft.
NOBLE COUNTY	
Alco Royalty Co.'s No. 1 Waltermire, SE cor. NW Sec. 33-21-1w	Cleaning out 2,278 ft.
Marland Oil Co.'s No. 1 Kidd, NW cor. SW Sec. 32-20-1w	Shut down at 5,290 ft.; plugging back to show oil 1,836 ft.
KINGFISHER COUNTY	
McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w	Drlg. 4,870 ft.
LOGAN COUNTY	
Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w	Shut down 3,970 ft.
J. L. Donahoe's No. 2 fee, SW cor. NW SE Sec. 21-18-2w	Preparing to plug 6,022 ft.
BLAINE COUNTY	
Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w	Spudded and shut down; renewing leases.
W. J. Donnelly, trustee's No. 1 Dickens, NE cor. SE Sec. 26-15-12w	Drlg. 4,400 ft.
Ragland and others' No. 1 Unknown, C NW SW Sec. 13-19-10w	Rig.
LINCOLN COUNTY	
Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3	Rig.
Morgan & Flynn's No. 1 Finlay, SW cor. SW Sec. 19-16-6	Location.
McLAIN COUNTY	
Empire Oil & Ref. Co.'s No. 1 Bonner, SE cor. NW NW Sec. 29-5-3	Rigging standard tools 4,160 ft.
MUSKOGEE COUNTY	
Elk Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17	Shut down 400 ft.
L. T. Haney's No. 1 Mitchell, SE cor. NW SE Sec. 33-13-18	Drlg. 2,300 ft.
J. L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20	Shut down 775 ft.
HUGHES COUNTY	
Bauer and others' No. 1 Penn, NW cor. SW NE Sec. 1-8-10	Dry and abandoned 4,255 ft.
E. W. Whitney and others' No. 1 Moore, SE cor. SW Sec. 17-5-9	Drlg. 3,345 ft.
Pure Oil Co.'s No. 1 Fixico, NE cor. SW Sec. 18-8-9	Dry and abandoned 4,500 ft.

(Continued on Page 96)

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the rig for No. 5 Whitney, SW cor. NE SW, Section 19-5-8.

LaSalle Oil Co.'s No. 2 Mole, NW cor. SE SE SE, Section 30-5-5, has been shut in for 3,000,000 feet of gas from sand at 1,468-74 feet. Homaokla Oil Co.'s No. 14 McCall, NE cor. NW SE NW, Section 17-5-8, Allen Pool. No. 15 McCall, NW cor. SE NW, Section 17-5-8, made 60 bbls. from Gilcrease sand at 2,315-72 feet. E. W. Whitney and others' No. 1 Shields, NW cor. SE, Section 20-5-8, Allen Pool, is dry and abandoned at 2,724 feet.

Oklahoma County

Hall & Briscoe have the rig up for No. 1 Childs, SE cor. Section 14-11-3w, Oklahoma City Field. Wirt Franklin Petroleum Corp. and others made location for No. 1 Trosper, C SE NW, Section 13-11-3w.

Pottawatomie County

Magnolia Petroleum Co. made location for No. 1 M. Germany, SW cor. NE, Section 30-9-5. Pure Oil Co.'s No. 1 Lindley, SE cor. SW SE, Section 18-8-5, Maud Pool, was deepened 10 feet in Misner sand from 4,115 feet to 4,125 feet and flowed 1,200 bbls. Phillips Petroleum Co. made location for No. 3 Hudson, NW cor. NE NW, Section 19-8-5. No. 4 Hudson, SW cor. NE NW, Section 19-8-5, is also a location. No. 5 Hudson, NE cor. NW NW, Section 19-8-5, is a cellar. Westheimer & Daube's rig is under construction for No. 7 Freid, NE cor. SE NW, Section 24-7-4. Sinclair Oil & Gas Co. made location for No. 2 Brandenburg, SE cor. SW, Section 7-7-5, St. Louis Pool. Indian Territory Illuminating Oil Co. and Sinclair Oil & Gas Co. made location for No. 1 Frederick, SW cor. NE NE, Section 18-7-5.

Empire Oil & Refining Co. and Amerada Petroleum Corp.'s No. 1 Bullock, NE cor. NW, Section 8-9-5, Earlsboro Pool, produced 530 bbls. from Wilcox sand at 4,403-16 feet. Sinclair Oil & Gas Co.'s No. 3 Bellars, NW cor. NE, Section 19-8-5, Maud Pool, was completed for 1,360 bbls. in sand at 4,114-53 feet. Sinclair Oil & Gas Co.'s No. 3 Neeley, SE cor. NW SW, Section 25-7-4, St. Louis Pool, swabbed 145 bbls. from Simpson sand at 4,260 feet after plugging back from 4,388 feet in Wilcox sand.

Gypsy Oil Co.'s No. 2 Dodson, NW cor. NE SE, Section 26-7-4, flowed 292 bbls. from Simpson sand at 4,192-4,250 feet. No. 4 Dodson,, SW cor. NE SE, Section 26-7-4, topped Simpson sand at 4,220 feet, drilled to 4,243 feet, then plugged back to 4,240 feet and swabbed 125 bbls. from Hunton lime. Empire Oil & Refining Co.'s No. 1 School Land, NE cor. Section 36-7-4, made 660 bbls. from Simpson sand at 4,315 feet. Magnolia Petroleum Co.'s No. 6 H. E. Youts, NE cor. SW SW, Section 20-7-5, flowed 1,669 bbls. from Wilcox sand at 4,432-45 feet. No. 1 M. Guinn, SE cor. NE NE, Section 20-7-5, was completed for 81 bbls. in Simpson sand at 4,300-75 feet. The Texas Company's No. 2 Zoeller, NE cor. SW SE, Section 30-7-5, swabbed 127 bbls. from Hunton lime at 3,880 feet, total depth 4,088 feet, in Sylvan shale.

Barnsdall Oil Co.'s No. 2 Stahl, SE cor. SW NE, Section 30-7-5, was completed in Wilcox sand at 4,346-50 feet for 160 bbls. Roxana Petroleum Corp. and others' No. 1 Lowe, SW cor. NW NE, Section 17-6-5, is dry and abandoned at 4,414 feet in Wilcox sand.

Seminole County

Skelly Oil Co. and Atlantic Oil Producing Co.'s No. 4 Lottie, NW cor. Section 6-9-6, Earlsboro Pool, is a cellar. Sinclair Oil & Gas Co. has the cellar dug and rig on ground for No. 2 Bean, SW cor. NE NW, Section 11-8-5, Mission Pool. The Prairie Oil & Gas Co. made location for No. 7 Billington, NW cor. SE NW, Section 11-8-5. Carter Oil Co. is building the rig for No. 2 Factor, SW cor. SE NW, Section 26-7-6, Little River Pool. Independent Oil & Gas Co. made location for No. 1 Reed, SE cor. NE NW, Section 26-7-6. No. 1 Carpenter, NE cor. Section 27-7-6, is a location. Sunray Oil Corp. is building the rig for No. 1 S. Nitchey, SW cor. NW NE, Section 19-5-8, Allen Pool.

Shaffer Oil & Refining Co. and others' No. 1 Jones, SW cor. NE, Section 18-10-7, is dry and abandoned at 4,710 feet. Skelly Oil Co.'s No. 3-A Mayes, NE cor. SE NE, Section 1-9-5, Earlsboro Pool, flowed 2,898 bbls. from Wilcox sand at 4,418-36 feet. Skelly Oil Co. and Atlantic Oil Producing Co.'s No. 1 Lottie, SW cor. NW NW, Section 6-9-6, was completed for 1,397 bbls. in Wilcox sand at 4,395-4,414 feet.

Barnsdall Oil Co.'s No. 1 Coker, SE cor. SW, Section 11-8-5, Mission Pool, flowed 1,735 bbls. from Wilcox sand at 4,316-26 feet. T. B. Slick's No. 1 Tiger, NW cor. SW SE, Section 13-8-5, has been abandoned at 4,535 feet in Wilcox sand. Magnolia Petroleum Co.'s No. 3 Vanbuskirk, NE cor. NW SE, Section 9-8-6, made 572 bbls. from Wilcox sand at 4,191-93 feet. Magnolia Petroleum Co.'s No. 7 Rhoades, SE cor. NW SE, Section 12-8-6, Bowlegs Pool, has been abandoned at 4,373 feet. W. B. Pine's No. 7 Hoyecha, NE cor. SE, Section 23-8-6, is dry and abandoned at 4,455 feet.

T. B. Slick's No. 1 Wilson, SE cor. SW, Section 2-7-6, Little River Pool, is dry and abandoned at 4,463 feet in Wilcox sand. No. 2 Reed, SW cor. SE NW, Section 13-7-6, made 15 bbls. in Wilcox sand at 4,361-64 feet after plugging back to 4,356 feet. Pure Oil Co.'s No. 10 Cotcha, SE cor. NE, Section 23-7-6, drilled to 4,472 feet in Wilcox sand and plugged back to 4,469 feet and made 70 bbls. The Texas Company's No. 1 Reed, NE cor. SE SE, Section 23-5-7, has been shut in for 28,000,000 feet of gas in Cromwell sand at 2,641-50 feet. Producers & Refiners Corp.'s No. 1 Johnson, NE cor. SW NW, Section 24-7-6, Little River Pool, made 580 bbls. from sand at 4,225-50 feet. No. 2 Moppin, SW cor. NW, Section 24-7-6, was completed for 1,350 bbls. in sand at 4,460-65 feet.

Greater Seminole Production

The production of the Greater Seminole area by companies and leases on Thursday, January 10, 1929, follows:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2- 7-6	3	305
Amerada-Wilcox:			
Fore	35- 8-6	2	480
Barnsdall:			
Cotcha	23- 7-6	2	1,615
Hotulke	22- 7-6	3	275
Walker	4- 7-6	1	465
Blackwell:			
Baker	11- 7-6	4	1,840
Nitey	35- 8-6	6	2,453
Talley	14- 7-6	4	1,560
Bryan & Emery:			
Walker	4- 7-6	1	13
Carter:			
Cotcha, M.	23- 7-6	3	360
Cudjo, L.	23- 7-6	2	515
Fish	36- 8-6	4	375
Harjo, C.	11- 7-6	3	3,910
Harjo, M.	13- 7-6	3	3,085
Jackson	11- 7-6	4	1,310
Larney	24- 7-6	4	3,460
Lena	10- 7-6	1	505
Moore	11- 7-6	2	530
Tewee	14- 7-6	6	2,155
Thomas	11- 7-6	1	205
Wilson	12- 7-6	2	307
Champlin:			
Tewee	14- 7-6	2	1,230
Continental:			
Cosar	36- 8-6	7	1,350
Cosar, M.	25- 8-6	1	190
Continental & Fisher:			
Milsey	11- 7-6	2	430
Empire:			
Charty	24- 7-6	1	51
Coker	13- 7-6	1	627
Sandlin	3- 7-6	1	15
Gypsy:			
Brown, C.	33- 8-6	2	140
Brown, M.	33- 8-6	1	1,105
Campbell	33- 7-6	2	25
Conard	22- 7-6	2	465
Cosar, M.	25- 8-6	1	off
Cosar, W.	36- 8-6	2	90
Cotcha	23- 7-6	7	2,240
Denmark	11- 7-6	4	1,355
Hulhoke	14- 7-6	10	2,357
Mungee	1- 7-6	1	10
Payne	5- 7-7	1	off
Pottie	35- 8-6	4	1,297
Renton	11- 7-6	3	487
Independent:			
Davis, R.	13- 7-6	4	2,975
Tewee	14- 7-6	6	2,047
Williams	15- 7-6	1	495
Independent & Highway:			
Harris	23- 7-6	8	2,710
Independent & White Eagle:			
Davis	2- 7-6	4	310
I. T. I. O.:			
Campbell	1- 7-6	1	123
Dungan	35- 8-6	3	678
House, M. A.	1- 7-6	1	20
House, W. E.	1- 7-6	1	16
House "B"	2- 7-6	4	781
Hull	26- 8-6	3	317
Jackson	1- 7-6	3	463
McCulla	1- 7-6	3	233
Nitey	2- 7-6	6	337
Phoebe "A"	36- 8-6	2	113
Phoebe "B"	36- 8-6	3	86
Reed	1- 7-6	1	22
Soketheche	1- 7-6	3	704
Magnolia:			
Cruse	2- 7-6	4	300
Denby	11- 7-6	4	296
Dixon	31- 8-7	1	2
Harjo, A.	14- 7-6	2	75
Harjo, B.	14- 7-6	2	472
Pottie	35- 8-6	4	266

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SEDGWICK COUNTY WELLS STILL CENTER OF INTEREST IN KANSAS

By Thomas F. Smiley

Sedgwick County continued to hold interest in Kansas oil fields this week. The Mary Jane Oil Co.'s new well, No. 1 Fitch, NW cor. SE SW, Section 6-26-1e, swabbed 1,350 bbls. in the 24 hours ending Sunday morning. It was down part of the time the next day and only an incomplete gauge was taken. The well flowed 178 bbls. in the first four hours when it was completed last week at a depth of 3,380 feet.

The wildcat well completed the week before by T. B. Slick, the LaRobb Oil Co. and others' No. 1 Smyser, NE cor. SW SE, Section 36-25-1, which began flowing 20 bbls. an hour when the pay formation found at a depth of 3,436 feet and when the well was drilled 2 feet deeper, made a better showing in later gauges. The 24-hour gauge taken Sunday morning showed a flow of 815 bbls. The well was down 9 hours out of the next 24, but in the 15 hours of flow 372 bbls. went into the tank. The well was showing a little water early this week and it was said to be likely it would be put on the pump.

The Marland Production Co.'s No. 1 Goodrich in Section 16-25-1e, which flowed 1,645 bbls. in the 24-hour gauge taken Sunday morning showed a falling off the next day, the Monday morning gauge showing a flow of 1,470 bbls. Of this 1 per cent was water and 2½ per cent b.s.

Butler County

Patten and others made location for No. 1 Moore, NW cor. SE, Section 33-24-3. Empire Oil & Refining Co. is moving the rig in for No. 75 Koogler, SW cor. SE NE, Section 19-26-5. The rig is also being moved in for No. 76 Koogler, NW cor. SE NW, Section 20-26-5. Rosenthal and others made location for No. 4 Marshall, SW cor. SE NW, Section 10-27-6.

Western Exploration Co. and La Robb Oil Co.'s No. 1 Winds, NE cor. NW, Section 7-25-5, has been abandoned at 800 feet. Wichita Petroleum Co.'s No. 2-A Orban, SE cor. NW NE, Section 10-26-4, has been completed for 50 bbls. in sand at 2,402-17 feet. Empire Oil & Refining Co.'s No. 4-B Hutchinson, SW cor. NE, Section 27-27-5, made 100 bbls. from sand at 2,717-41 feet. No. 4 R. Sherrock, NW cor. SE, Section 27-27-5, made a 60-bbl. well in sand at 2,714-39 feet. No. 5 R. Sherrock, NE cor. SW, Section 27-27-5, was completed for 300 bbls. in sand at 2,726-53 feet. Rosenthal and others' No. 3 Marshall, NW cor. SE NW, Section 10-27-6, is producing 200 bbls. from sand at 3,121-39 feet.

Coffey County

Union Gas Co.'s No. 1 Wiler, SE cor. NE, Section 1-23-14, made 4,000,000 feet of gas in sand at 1,523-81 feet. No. 2 Wiler, CEL SE NE, Section 1-23-14, was completed for 500,000 feet of gas in sand at 1,260-65 feet.

Cowley County

Broadwater Drilling Co. is building the rig for No. 1 Plummer, SE cor. NE SE, Section 17-30-3. White Eagle Oil & Refining Co. and others made location for No. 1 Franks, NW cor. SE, Section 25-31-4.

Elk County

M. L. Truby and others' No. 1 Ben, SE cor. NW SE, Section 25-30-10, is a machine rigging up. Griffin & Bell's No. 5 Colyer, SW cor. NE SW, Section 30-30-11, made 32 bbls. from sand at 1,882-91 feet. Wilson, Jones and others' No. 2 Walker, SE cor. NW SE, Section 5-31-10, has been completed for 30 bbls. in sand at 2,207-37 feet. Litteral and others' No. 1 Moline Townsite, Lot 3, Block 32, NW cor. SW SE, Section 10-31-10, has been abandoned at 2,009 feet. Peters Petroleum Co.'s No. 1 McSpadden, SW cor. SE SE, Section 18-31-10, is dry and abandoned at 2,262 feet.

Ellis County

Burgher and others made location for No. 1 Hadley, SW cor. NW, Section 20-11-17w.

Greenwood County

Sheedy and others' rig is up for No. 10 Green, NE cor. Section 11-23-9. Phillips Petroleum Co.'s No. 3 Green, NW cor. NE, Section 11-22-10, is producing 200 bbls. from sand at 2,095-2,132 feet. Empire Oil & Refining Co.'s No. 1 Edwards, NW cor. NE SE, Section 21-23-11, is dry and abandoned at 2,029 feet. No. 10 Edwards, SE cor. SW NE, Section 21-23-

(Continued on Page 78)

KANSAS WILDCATS

BARBER COUNTY

Company, farm and location—	Remarks
Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w	2,000,000 ft. gas 4,755 ft.; fishing tools.
Rolland et al's No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w	Shut down 4,223 ft.

BARTON COUNTY

Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft.
Mid-West Exploration Co.'s No. 1 Karst, SW cor. SW Sec. 11-16-15w	Drlg. 2,970 ft.

BUTLER COUNTY

O. H. Fleming et al's No. 1 Brainard, NE cor. NW Sec. 22-24-3	Drlg. 3,145 ft.
LaRobb et al's No. 1 Bronsenger, NE cor. SW Sec. 24-27-3	Rig.
Swartz et al's No. 2 Randall, NW cor. NE NW Sec. 22-24-4	Shut down 2,605 ft.

CHASE COUNTY

Griener & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7	Shut down 3,162 ft.

COWLEY COUNTY

Jones & Hall's No. 1 Shapland, NE cor. NW SE Sec. 20-30-6	Drlg. 3,054 ft.
Roth & Faurot's No. 1 Ridding, SE cor. NW Sec. 31-32-6	Drlg. 2,600 ft.
Shell Pet. Corp.'s No. 1 Galley, NE cor. NW SW Sec. 18-35-3	Drlg. 2,190 ft.
Pyle & Sutter's No. 1 Lindstrom, SW cor. NE Sec. 9-35-4	Drlg. 2,000 ft.
Empire-Marland-Twin States' No. 1 Feaster, NW cor. NE Sec. 36-32-5	Plugging back to shoot show oil 3,165 ft.
E. B. Shawver's No. 1 Cook, NE cor. NE Sec. 20-30-6	Drlg. 2,860 ft.
Crow & White's No. 1 Powers, C NW NE Sec. 9-32-5	Sand 714-734 ft., 1,000,000 ft. gas.
J. B. Markey's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 500 ft.
Jones & Hall's No. 1 Shapland, SE cor. NW SE Sec. 20-30-6	Shut down 3,396 ft.
Wakefield & Osborne's No. 1 Osborne, NW cor. NE Sec. 18-30-5	Rig.

ELLIS COUNTY

Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w	Shut down 1,100 ft.
Transcontinental Oil Co.'s No. 1 Boetcher, NW cor. SE SW Sec. 21-13-19w	Fishing 3,858 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w	Spudded and shut down.
Labette Oil Co.'s No. 1 Urban, NE cor. NW NW Sec. 19-15-16w	Drlg. 3,348 ft.
Atlantic Oil Prod. Co.-D. B. Mason's No. 1 Gorham estate, C SE SE Sec. 35-15-16w	Drlg. 2,310 ft.
Derby Oil Co.-Empire Oil & Ref. Co.'s No. 1 Krause, NW cor. SW SW Sec. 17-14-19w	Underreaming 3,829 ft.
Phillips Pet. Co.'s No. 1 Brull, C NW Sec. 34-14-17w	Drlg. 1,200 ft.
Moncrief et al's No. 1 Johnson, SW cor. NE Sec. 9-13-19w	Rig.
John Brown's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w	Drlg. 1,350 ft.

(Continued on Page 98)

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Champagnolle Wells Offset Failures

Ohio Oil Co. Abandons Two but Gets Good Completions. Gas Developments Louisiana-Arkansas Feature

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Jan. 14.—Ohio Oil Co. abandoned two Champagnolle wells this week that it had kept on the active list since October, though it appeared there was little prospect of their ever being worth while putting on the pump, but got two good ones in return. No. 1 Carroll heirs in the NW cor. SW NW, Section 6-17-13, had swabbed 100 bbls. of fluid, 10 per cent oil, when temporarily abandoned at 3,000 feet, total depth 3,009 feet. It had been cemented back from the latter depth to test the 6 feet of sand from which the oil was coming but failed to respond. No. 4 Crain, in the NW cor. NE SE, Section 1-17-14, was one of the company's first half dozen or so locations in the field but did not begin drilling until last September, a year after the location was staked, and when drilled, the sand had been fairly well drained by four or five previous completions with resulting salt water encroachment. Total depth was 3,174 feet. No. 4 Nash, Account 1, in the SW cor. SE SW, Section 6-17-13, was the last completion of the week, and the best; 1,200 bbls. from 5 feet of sand, total depth 3,010 feet. Initial production on this "forty" from the four wells totaled 3,521 bbls. with total production hugging 200,000 bbls. No. 1 L. L. Ward in the NE cor., Section 15-17-14, delivered 20,000,000 feet of dry gas from 7 feet of sand, total depth 2,755 feet. It is a west offset to No. 1 O. W. Ward in the NW cor., Section 14-17-14, which gauged 10,000,000 feet from the same approximate level. C. E. Murdock abandoned location for No. 3 Union Sawmill, in the N half NW SW, Section 6-17-13, on which 20 acres he already has two producers. J. E. Crosbie's No. 3 Primm, in the NE cor. SW SW, Section 24-15-16, Ouachita County, Smackover, was the only other producer during the week, 6 of the remaining 10 being gas wells in north Louisiana and East Texas districts.

Louisiana Gassers

Two of the three gassers in Louisiana were in the Ouachita Parish division of the Monroe district, Southern Carbon Co.'s No. 10 Fairbanks, Section 43-20-4, 11,000,000 feet, total depth 2,140, and United Oil & Gas Products Co.'s No. 1 Stevens, Section 26-20-4, 7,000,000 feet, total depth 2,127 feet. Bob Elmore's No. 1 Mitchell in Section 31-23-9, Shongaloo district of Webster Parish, gauged 6,725,000 feet, total depth 2,612 feet.

Palmer Corp.'s No. 11-B Hodges, Section 25-16-12, Elm Grove district of Bossier, was a dry hole at 2,513 feet and No. 12-B is already under way in the same section. Bayou State Oil Co.'s No. 34 Hoss, Section 24-22-15, Hosston district of Caddo Parish, tested salt water at 1,078 feet; No. 6 Lane in Section 22-22-15, has 6-inch cemented for a test.

Harrison County, Texas, listed Nick Barbare's No. 4-A-2 Fuller in the James Short Survey, a 1,000,000-foot gasser at 2,390 feet. Panola County had two failures, both deep tests. Magnolia Petroleum Co.'s No. 1 Sheehan, an old well in the James Asher Survey completed originally as a 10,000,000-foot producer, total depth 1,935 feet, and Industrial Gas Co.'s No. 1 Cook, deepened to 2,008 feet where it was abandoned on account of salt water. Magnolia's No. 2 Steele in the B. C. Jordan Survey, was abandoned as a junked hole. Total depth was 3,259 feet at which depth it had blown out three months before with an estimated 25,000,000 feet of gas and partly wrecked the derrick. It was killed and plugged back to 2,740 feet where they planned to set 6-inch but between stuck casing and a bridge were never able to get the hole to the bottom.

Natural Gas Producing Co.'s No. 3 Roquemore, in the B. C. Jordan Survey, was a 5,000,000-foot well, total depth 2,850 feet and D. Thomason's No. 12 Crenshaw, in the same survey, made 7,000,000 feet, total depth 2,630 feet.

Increased Work

The sudden increase in new work in wildcat areas getting under way during the week also is noticed in proven territory. Nine new wildcat jobs were begun and 11 in proven areas. All the latter were in Louisiana as were five of the nine wildcats. This is interesting, in view of the general tendency to do only such drilling as is necessary to secure and protect leases, induced by the state administration's attitude and the new severance tax. Magnolia has made location for two wells in the "barren spot," 3 miles east of Oil City, which it proved up with No. 3 Levee Board a few weeks ago; No. 18 Doan Thigpen in Section 7-20-15, and No. 4 Levee Board in "discovery" Section 7-20-15.

Dixie Oil Co. is arranging to cement 6¼-inch to cut off the salt water that showed up again in No. 91 Dillon, Section 14-21-10, when it was swabbed after plugging back from 3,621 to 3,611 feet when it filled up with water after testing 8,000,000 feet of gas. No. 3-B Wells, Section 21-21-15, is arranging to shoot after testing dry at 1,745 feet.

Haynes Brothers, whose No. 1 Murray in Section 14-21-15, was the first to get production (6,500 bbls.) in the 3,600-foot horizon of Pine Island and started a small sized boom during the summer of 1927, will deepen it to 3,800 feet or below. It was a second completion when it started the excitement. Smitherman and McDonald were coring at 4,325 feet on No. 1 Miller, their co-operative deep test in Section 17-23-8, Haynesville, and lacked only about 100 feet of being where Ramsey & McDonald got the gas in their deep well in Section 14-23-8, two or three years ago.

Morehouse Parish

Southern Carbon Co.'s No. 51 fee, Section 15-20-4, Morehouse Parish, staged a blowout at an unexpected level and had to be killed and abandoned. The gas, probably seepage into the upper sands from some of the craters of the early days of the Monroe Field, showed up at 805 feet. There was only 184 feet of 12-inch casing in the hole, so, instead of trying to mud off the gas and hold it back until it could be sealed off in cementing second string, the well was plugged and abandoned and second hole started 50 feet east.

NORTH LOUISIANA-ARKANSAS TESTS; MISSISSIPPI TO DRILL ANOTHER

By D. H. Bancroft

SHREVEPORT, La., Jan. 14.—Wildcat areas had not much to offer in the way of completions, Woodley Petroleum Co.'s No. 3 Whitehurst, Section 34-16-1, in the Caspina district of Caddo Parish, with 4,000,000 feet of gas at 410 pounds, total depth 2,451 feet, being the whole list, but on the other hand eight new operations, two of them drilling and the others rigs and locations, appear in the report. Four of these were widely scattered in Arkansas and the remainder as widely scattered in Louisiana.

Ohio Oil Co. made location for its first well on the block taken from Jerome Hardwood Lumber Co., approximately 4,000 acres, in addition to which it has options on several times that many more. This test, No. 1 Jerome Lumber Co., in SE cor. NE, Section 13-15-4, is the farthest northeast well in the current wildcatting campaign that has been going on in southeastern Arkansas for several months. C. F. Steel is drilling No. 1 E. W. Groves in SE NW, Section 21-14-20, half way between production in the Stephens and Nevada County producing areas. South of him and just north of the town of Stephens Nat Martin has blocked 2,000 acres in Township 15, Range 19, on which it is rumored he is figuring on drilling a deep hole. Sam Sklar of El Dorado has a location in NW cor. SE SW, Section 19-15-15, north of Smackover production, for a well on the Langley farm and in the old El Dorado South Field territory Calgo Oil Co., which recently temporarily abandoned No. 1 Primm, Section 25-18-15, at 3,600 feet, is washing to bottom to go deeper.

Bossier Parish

Woodman and others have made location in Section 9-22-11, Bossier Parish, across the parish line from the Sarepta gas field in Webster Parish, where two or three producers have been completed, and southeast of the Cartersville gas field for No. 1 Bollinger. Structural conditions in this vicinity are considered good and numerous wildcats, while failing to produce, have been sufficiently encouraging to prompt further prospecting. The same interests also have derrick up in Section 3-22-11, a half mile northeast in Webster Parish, for No. 1 Boyd. V. L. Shaw and others have location in Section 1-20-3, Lincoln Parish, near Dubach for No. 1 Voss. Rainbow Oil Co., Schaffer and others of Fort Worth, have derrick up for No. 1 Louisville Cooperage Co. in Section 33-22-8, Morehouse Parish, southeast of The Texas Company's Myers well that caused excitement during the summer. Wilson and others have rig up for No. 1 Buie in Section 17-15-7, Richland Parish, south of Mangham, and 3 miles east and 4 miles south of the nearest producer in the gas field.

Palmer Corp.'s No. 1 Mitchner in Section 8-19-4, topped the Nacatoch at 2,401 feet, 43 feet lower than it found it in its O'Brien producer a quarter-mile southwest, and are waiting for casing to make a test. Dixie Oil Co. is fishing for core barrel on No. 1 Gilbert, Section 27-21-5, Claiborne Parish, at 4,517 feet and will probably make a 5,000-foot test of it. A. C. Glassell is reported to have taken a half interest in El Dorado Chief Oil Co.'s No. 1 Baker in Section 26-20-7, and 240 acres to drill the well to 3,000 feet. It has been shut down for the past two weeks at 2,092 feet. Similarly, Atlantic Oil Producing Co. is reported on a deal with Enochs and others for a block of 15,000 acres and the Enochs No. 1 Curry in Section 39-11-12, Tensas Parish, which they will either drill deeper from its present 3,583 feet or drill a new hole; probably the latter. This well had 20 feet of broken sand that showed oil and gas but when 4½-inch and packer was set on the bottom it developed only hot salt water.

Zwolle Area

Reorganization of the Zwolle Oil &

(Continued on Page 113)

Magnolia Petroleum Co. appears to have hit a barren spot in the north end of the Richland gas field, No. 2 J. Sartor, in the C SW SW SW, Section 16-16-6, testing dry at 2,450 feet standard depth for Richland gassers, but will go deeper. In a previous case of the same sort the well was deepened to 2,500 feet or a little below and completed as a producer.

Lion Oil Refining Co. is preparing to deepen No. 5 Rowland, in the NE NE NE, Section 15-17-14, a west offset to No. 1 in the Champagnolle district. Completed November 22 at 3,207 feet, it made 2,000 bbls. salt water and 100 bbls. of oil. No. 1 El Dorado Realty Co. is a new location in the NW cor. SE SE, Section 7-17-13, offsetting Marine Oil Co.'s No. 1 El Dorado Realty, a producer, on the south. Marine Oil Co. will probably complete a producer in No. 2 Sample in the same section during the next few days, as it offsets Ohio Oil Co.'s 1,200-bbl. No. 4 Nash, Account 1, on the south and Ohio Oil Co.'s 570 bbl. No. 1 Alphin on the east. Casing was cemented on top of the pay at 3,038 feet, total depth 3,041 feet.

Pure Oil Co.'s second drill stem test on No. 6 W. E. Gregory, Section 15-17-14, filled up 28 fourbles with oil and salt water coming from between 3,060 and 3,085 feet. The former test filled 10 fourbles with salt water from 2,635-40 feet. No. 1 Nash in the NW cor. NE SE, Section 7-17-13, a quarter mile north and west of Magna Producing Co.'s Nos. 1 and 2 El Dorado Realty Co., is not looking so well, showing oil with salt water from 3,032-46 feet, but is running core barrel and probably will set casing for a test.

The week's production figures show a decline of 780 bbls., an increase of 245 bbls. in Louisiana runs shading a decline of 1,025 bbls. in Arkansas to that extent. Champagnolle was responsible for most of the decrease, dropping 945 bbls. to an average of 10,920 bbls. Caddo light, Smackover heavy and Bellevue also were considerably below last week's averages. Cotton Valley light oil runs virtually disappeared and were not included in the report when the one remaining producer went to 6 bbls. Daily average runs from the several pools were:

Louisiana	
Caddo, light	9,145
Caddo, heavy	2,805
Homer	4,040
Haynesville	5,530
DeSoto-Red River	4,055
Elm Grove	595
Bellevue	730
Cotton Valley	3,240
Urania	6,020
Pleasant Hill	490
Total	36,655
Arkansas	
El Dorado	4,945
Smackover, light	7,050
Smackover, heavy	51,585
Stephens	1,020
Nevada County	1,570
Lisbon	1,670
Champagnolle	10,920
Bradley	100
Total	79,160
Both states	115,815
Last week	116,595
Decrease	780

North Louisiana

Bossier Parish

Elm Grove—Palmer Corp. has rig up for No. 12-B Hodges, 660 feet south and 1,320 feet east NW cor. Section 25-16-12.

Caddo Parish

Hosston—Bayou State Oil Co. set 10-inch at 61 feet and 6-inch at 992 feet on No. 6 Lane, Section 22-22-15.

Oil City—W. D. Chew has derrick up 350 feet south and 150 feet east NW cor. NW SW Section 34-21-16 for No. 6 State. G. C. Gibbins is coring No. 1 Gibbins, Section 15-21-16, at 2,396 feet.

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Joe Bruner Field Center of Interest

Shell Petroleum Co. Completes 100-Bbl. Producer, Probably East Edge Well. Activity in Albercas Field

By B. D. Stevenson
Staff Correspondent, Southwest Texas

SAN ANTONIO, Tex. Jan. 14.—Crude price cuts were announced the past week in both the Joe Bruner or Salt Flats Field at Luling and in the old Luling Field. Sun Oil Co. last Wednesday posted a price of $1 a barrel for crude oil in the Bruner Field instead of $1.36 which it had been paying. This meets the price of the Magnolia. The Magnolia was the first to run a line to the field and has been paying $1 for the crude from the first. In the old Luling Field where the Magnolia company takes the bulk of the production of the field, Magnolia last Friday posted a new price of 80 cents effective that morning at 7 o'clock to take the place of the former price of $1 a barrel. The bulk of the oil run by the Magnolia is owned by that company. Grayburg, Rio Bravo and Golden West run some oil from the field.

Bruner Field

Shell Petroleum Co. completed its No. 1 Carter in the northeast end of the Joe Bruner of Salt Flats Field in Caldwell last week good for about 100 bbls. of oil a day and the well was important in spite of its size, for it helped to shape up and prove up the field. Humble Oil & Refining Co. the week before completed its No. 1 T. B. Johnson 2 miles northeast of nearest production and it made a small well, probably an east edge well. The Shell Co.'s No. 1 Carter is about half way between the field and the Humble well but a little east of a straight line from the Humble well to the nearest producer. The Shell well is probably also an east edge well. Shell Co. later completed a well on the J. B. Tiller tract somewhat to the west and got a good producer and added more territory. This extension to the northeast is the most important happening in the field at this time. Other completions were of lesser importance but a number of wells are due the coming week which should help swell the production figures.

Late in the week Golden West Oil Co. was drilling in No. 1 Cook at the south end of the field and a little to the east of the line of production. It had 47 feet of dobie which is more than ordinary and showed no oil. It was drilling in with cable tools. Late in the week it was due to break through the cap into the Edwards lime.

Proven fields in Southwest Texas were singularly quiet the past week with few completions. In the Refugio Field there were three wells due in within a few days with the holes in the sand and casing set or else reaming to find the sand. In the north end of the field the Union Exploration Co.'s No. 1 Holmes Heard had the sand at 3,695 feet with a core showing oil which indicates a probable quarter-mile extension of oil production to the north and in the south end of the field Saxet Oil Co.'s No. 5 Claude Heard had casing set at 3,709 feet with a core showing oil which indicates a possible slight extension of the field south. Union Exploration Co. and Wiliam F. Morgan's No. 2 Adkins in the north end of the field was feeling for the sand at 3,667 feet. It is an eighth of a mile from an oil well producing from that horizon.

Laredo Territory

In the Laredo territory probably the most interesting completion was Robert Driscoll's No. 13 fee at 2,475 feet with 1,200 pounds rock pressure and 40,000,000 feet of gas. The well is 2,100 feet from the east line and 900 feet from the south line of Survey 448 in Duval County. The well is the farthest to the southwest of any well in the field and is about a half mile southwest of No. 8 fee, which was the discovery well in that sand but not as big as No. 13. Driscoll is a ranch owner and banker at Corpus Christi and drilled a number of shallow gas wells in that part of his ranch and later No. 8 which was many months drilling ran into a big volume of gas. Later drilling has helped to develop the field slightly but has not attracted much attention because Driscoll owns all the land in fee. The new well is important because it is on a new fold farther east than any of the producing folds in the Laredo territory and there are possibilities north and south of the Driscoll wells on other lands.

In the Albercas Pool in southeastern Webb County the Rycade Oil Corp. extended the Albercas Pool 600 feet farther south by bringing in No. 9 Yeager-Strohman with 350 bbls. of oil a day in sand at 2,145-54 feet. No. 6, which is between No. 8 and No. 7 is on sand at the same depth and ready to be brought in. Sun Oil Co.'s No. A-12 Yeager-Strohman is an east offset to Rycade's No. 8 and is on the sand at the same depth and its No. A-13, an east offset to Rycade's No. 9 is drilling at 1,900 feet. Rycade and Sun each have room for only about one more location south before they reach the south line of their leases and the south line of Webb County. Anticipating that the field will keep on coming south, A. W. Majors has made a location for his No. 1 Holbien 150 feet from the north and east lines of Block No. 6, Share 3, of the Hoff Ridge Subdivision of the Holbien ranch, which will be nearly a south offset to the next location south by the Rycade.

The south end of the Albercas Pool is practically the only part where there is any activity. O. W. Killam, who has acreage at the north end, has spudded in his No. 33 Bruni in Block 64, and it is down 700 feet and the Magnolia's No. 13 Yeager-Strohman, a quarter-mile east of the Rycade-Sun line of producers, is drilling at 4,544 feet. It failed to find the producing sand at around 2,150 feet. O. W. Killam has completed his No. 31 Bruni in the center of the north half of Block 64 of the Albercas Grant at 2,206-09 feet and it made 25 bbls., a little small in production but it extended the field four or five locations. It may be an edge well with some good producers between it and the rest of the field yet to be drilled.

In the Magnolia-Cole Pool the Cole Petroleum Co. completed the No. 66 Benavides and got a 150-bbl. well in sand at 2,316-24 feet.

In the Cuellar Field in Zapata County east of the old Jennings gas field O. W. Killam completed No. 9 Cuellar for 50 bbls. of oil in sand at 1,462-70 feet.

COMPLETIONS

Caldwell County

Linderman & Atlantic's No. A-1 W. F. Davis, A. Floyd Survey, Bruner Field, completed at 2,830 feet, plugged back to 2,730 feet, shot with 300 quarts, and brought in estimated 200 bbls.

Shell Petroleum Corp.'s No. 4 W. L. Smith, A. Floyd Survey, same field, completing, estimated good for 1,000 bbls.

Shell Petroleum Corp.'s No. 1 R. W. Carter, Gerren Hinds Survey, same field, brought in at 2,694 feet, estimated 100 bbls. daily.

Humble Oil & Refining Co.'s No. 2 William Smith, A. Floyd Survey, same field, completed 2,687 feet, estimated 1,200 bbls. initial output.

J. S. Abercrombie Oil Co.'s No. 4 Lida Moses, A. Floyd Survey, completed at 2,708 feet, 900 bbls. daily.

The Texas Company's No. 1 M. Merriweather, A. Floyd Survey, completed as 65-bbl. well in the chalk.

Gulf Production Co.'s No. 2 J. J. Davis, A. Floyd Survey, brought in at 2,700 feet, good for 500 bbls. daily.

Duval County

Robert Driscoll's No. 13 Driscoll, Survey 448, has been completed at 2,475 feet good for 40,000,000 feet daily with 1,200 pounds rock pressure.

Jim Hogg County

Randado Oil Corp.'s No. 28 Palacious, Survey 291, Block 2, completed at 1,292-1,305 feet for 40 bbls.

Randado Oil Corp.'s No. 27 Palacious, Survey 291, Block 14, completed at 1,276 feet for 100 bbls.

Refugio County

Houston Gulf Gas Co.'s No. 3 Rea, Block 5, Refugio Field, completed at 3,475 feet as a gas well with 1,100 pounds rock pressure and volume not gauged but estimated 50,000,000 feet per day.

Webb County

Cole Petroleum Co.'s No. 66 Benavides, Survey 412, Block 4, Magnolia-Cole Field, has been completed at 2,324 feet for 150 bbls.

Rycade Oil Corp.'s No. 9 Yeager-Strohman, Share 5, Albercas Field, at 2,154 feet has been completed for 350 bbls.

O. W. Killam's No. 31 Bruni, Block 64, Albercas Field, has been completed at 2,209 feet for 25 bbls.

Zapata County

O. W. Killam's No. 9 Cuellar, Jennings Field, Cerrito Blanco Grant, at 1,470 feet is a 50-bbl. well.

ABANDONED TESTS

Edwards County

Gail Oil Co.'s No. 1 Neal Jergin, G.C.&S.F. Ry. SurveyNo. 2, at 4,110 feet has been abandoned dry.

Guadalupe County

Wolf Creek Oil Co.'s No. 1 Mrs. L. Hocke, Harriett Cottle Survey, location has been abandoned.

Magnolia Petroleum Co.'s No. 1 C. H. Adams, J. Randolph Survey, is dry and abandoned at 3,164 feet.

Maverick County

Rycade Oil Corp.'s No. 2 Chittim, Section 158, Block 7, has been abandoned at 7,635 feet; no oil showings below 5,130 feet.

NEW LOCATIONS

Bastrop County

Atlantic Oil Producing Co.'s No. 3 Yoast is location in the new Yoast Field.

Cranfill & Reynolds' No. 6 Yoast is location in same field.

Bexar County

Indian Creek Oil & Gas Co.'s No. 1 W. Wolfsohl, J. A. Navarro Survey 5, is location 180 feet to CEL.

B. L. Raborn's No. 1 Englemann, John James Survey No. 73, 300 feet to south line and 600 feet to east line, has been shut down for some time at 1,715 feet in lime formation and has recently resumed drilling.

Caldwell County

The Texas Company's No. 6 Merriweather, A. Floyd Survey, 150 feet to northwest lines and 70 feet to northeast lines (location first reported as No. 5).

Gulf Production Co.'s No. 3 J. J. Davis is drilling at 727 feet in shale.

(Continued on Page 110)

MAVERICK FIND BY RYCADE CORP.; MAKES 7 MILES LOOK PROMISING

By B. D. Stevenson

SAN ANTONIO, Tex., Jan. 14.—Rycade Oil Corp., which a couple of years ago in Maverick County, 7 miles east of Eagle Pass, drilled No. 1 Chittim in the NW cor. of Section 129, Block 7, into 28,000,000 feet of gas and about 75 to 100 bbls. of oil at 5,565 feet, last week drilled No. 3 Sullivan in the SW of Section 71, Block 7, into 2,000,000 feet of gas at 5,125 feet. It is 7 miles northwest of No. 1 Chittim and the wells are in the same sand. No. 1 Chittim got its first 2,000,000 feet of gas at 5,517 feet and deepening gauged later 28,900,000 feet of gas and was estimated at 75 to 100 bbls. of oil. No. 3 Sullivan gauges 2,000,000 feet of gas and the gas is wet.

The Rycade find in Maverick makes 7 miles of territory all under lease to the Rycade look exceedingly good for oil as well as gas and many believe there is a structure through the county northwest to southeast about 45 miles in length. While the two wells of the Rycade are on a block of some 250,000 acres some of the 45 miles of structure will be off its acreage. Maverick County has been in the mind of the industry ever since the Rycade drilled No. 1 Chittim. The production in it as in No. 3 Sullivan is from the Glenrose which is the first time that formation has produced in Southwest Texas. No. 1 Chittim was finally lost and abandoned after reaching a total depth of 5,688 feet. It had numerous fishing jobs and sidetracked more than once. One of the features of this wildcat territory that looks as though it would some day pay off is the fact that it is about 125 miles from any production. The Laredo district production, 125 miles to the southeast, and the Somerset production in Bexar County, about the same distance due east, is as near as any. Some gas is known to exist in Zavala County and is now being developed and it is 50 miles east of the Maverick County wells. Hence the Rycade proposition is wildcat of the wildcat.

Laredo District

Wildcat efforts in the Laredo district worthy of mention are L. W. Nelson's No. 1 Moglia near the center of the east line of Section 672 in the eastern edge of Webb County and several miles northwest of the gas Simms Oil Co. found in Section 666 over the line in Duval County. A few wildcat tests have been drilled in this territory before and there is probably a structure and some production.

A flock of new wells has been announced to be drilled north of the Magnolia-Cole Field in Webb County, around the spot in Survey 693 where the Houston Gulf Gas Co. brought in a good gas well. William F. Morgan is starting one well a little east of the Houston Gulf Gas well; Union Exploration is starting a well west of it in Survey 694 and Magnolia has spudded in a well 2 miles north of it.

Two wells in the southeast part of the Carolina-Texas gas area mentioned in last week's reports to The Oil and Gas Journal are looking interesting. This territory is wildcat as to oil. Usher Carson has now a couple of wells and the effort is to develop it into a pool. W. R. Shankle's No. 1 Webster, a quarter mile southeast of the nearest Carson well, cored a sand showing oil at 2,015-28 feet and Foster-Barnsley's No. 1 Webster, an eighth of a mile south and a little west of the Carson well, at 2,200 feet shows gas and a little oil. Neither is down to

(Continued on Page 113)

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Showing in Jefferson Davis Parish

First Test on Recently Checked Torsion Balance Dome Near Roanoke Suggests Another Field in the District

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Jan. 14.—Showings encountered by the Vacuum Oil Co. in its first test on the recently checked torsion balance dome near Roanoke, Jefferson Davis Parish, Louisiana, probably were the most interesting developments in Gulf Coast operations the past week. Although it is impossible to predict a well, the showings were of such importance as to indicate the possible existence of another field in that district.

The Roanoke Dome, on which the Vacuum test, No. 1 DeVilbiss, is being drilled, lies between the Jennings Field of Acadia Parish, and the Welsh Field of Jefferson Davis Parish, both of which are among the oldest producing domes on the coast. The Jennings Field has yielded some of the most prolific wells in coastal history. The well is in Section 14-9s-4w, which is believed to overlie the top of the dome.

The showings were found in a sandy shale at 4,188-4,200 feet. Testing of the formation probably will not be possible before the latter part of the week and is being delayed pending arrival of 9⅝-inch casing which will be set at 4,176 feet. The salt plug over which the present oil formation is supposed to lie was checked as being very deep.

Another wildcat showing of some interest was in Rycade Oil Corp.'s No. 1 Gulf Land on the Old Hackberry Dome of Cameron Parish. A sandy shale at 4,319 feet will be tested. The test is on the opposite side of the dome from where the first commercial production was opened several weeks ago on the south flank. This dome, however, has had a very disappointing career. It is one of the old domes in the coast and scores of tests have been drilled on and around it, some of which have had good showings but none has made a well with the exception of Cameron Oil Co.'s No. 2 Duhon, completed several weeks ago flowing 200 bbls. daily.

DeWalt Completion

Chief among completions of the week was Humble Oil & Refining Co.'s No. 4 Sugarland on the year-old DeWalt Dome of Fort Bend County, which came in flowing initially at the rate of 1,600 bbls. daily from sandy shale at 3,700 feet. This well is 480 feet north of the discovery well, No. 1 Sugarland, which has been flowing steadily since March 26, 1928. The steady string of good wells which have been completed in this new field is placing DeWalt among the front-rank producers of the coast with its daily average production well above the 6,000-bbl. mark, although pinched in.

The wildcat east flank of the Boling Dome also added another good well during the week in Sun Oil Co.'s No. 4 Kasparek, which came in flowing between 275 and 300 bbls. of pipe line oil from sand at a total depth of 3,986 feet. This is the sixth well completed on this side of the dome since first production was found last summer, these wells extending a distance of nearly 2 miles along the flank.

New Raccoon Bend Sand

Humble Oil & Refining Co.-Valley Oil Corp.'s No. 2 Walton at Racoon Bend, Austin County, which picked up an entirely new oil sand in this new field, Saturday was swabbing at the rate of approximately 100 bbls. daily. Sand in this well is from 2,195-2,226 feet and is slightly over 1,000 feet shallower than producing sands in other wells not including the 1,000-1,100-foot gas sand. It is possible, however, that if this well is not made to flow naturally it will be deepened to the lower sand.

The best well so far completed in the new shallow sand area was brought in the middle of the week. This was Gulf Production Co.'s No. 2 Marrs McLean. It came in initially for an estimated 1,000 bbls. from sand at 853 feet, but then increased its flow until it made as high as 2,800 bbls. daily. The latter part of the week it had dropped to around 1,400 bbls. daily. This well caused a little more interest in that area, in which completions, since the discovery well, have been marked only by routine small producers with a few failures.

Sun Oil Co.'s No. 29 Mitchell, a direct east offset to Gulf's No. 2 McLean, was completed flowing at the rate of 1,000 bbls. daily. Gulf's No. 3 McLean, a location north of No. 2, also made a 500-bbl. well. Gulf's No. 7 Chambers in the tract to the south of the McLean lease was put on the pump for 50 bbls., 2 per cent water.

Spindletop Wells

Three routine wells were completed at Spindletop, all being work-overs. They were Yount Lee Oil Co.'s No. 15 Gladys City, flowing 200 bbls. at 3,025 feet; this company's No. 39 Gladys City, flowing 400 bbls. at 3,050 feet, and its No. 53 Gladys City pumping 100 bbls. at 3,074 feet.

The deep sand production on the east flank of South Liberty was extended still further north by two more small wells: Sun Oil Co.'s No. 14 Mitchell, flowing 225 bbls. at 3,505 feet, and Yount Lee Oil Co.'s No. 13 Mitchell, flowing 250 bbls. at 3,510 feet.

Gulf Production Co. worked over its No. 23 Davis, Big Creek, this well coming in again for 800 bbls. at 3,123 feet. At Blue Ridge, South Texas Petroleum Co.'s No. 4 Blakely, a former producer, was deepened to 3,863 feet and flowed 400 bbls. daily initially. Sinclair Oil & Gas Co.'s No. 3 Davison, in the same district at Blue Ridge, has been deepened to 4,321 feet, at which level it has been completed flowing 350 bbls. daily.

Other completions of the week were Green Oil Co.'s No. 5 Moore, Edgerly, a work-over, flowing 10 bbls. net oil with 390 bbls. of water; Marrs McLean's No. 11 Gray, Vinton, a work-over, pumping 20 bbls. net, and Paraffine Oil Co.'s No. 44 Knight, Batson, pumping 8 bbls. net, 855 feet.

Gay Hill Field

The new Gay Hill Field of Washington County figured again in the week's news when Sun Oil Co.'s No. 1 Witt blew out and caught fire while drilling in a sand at 595 feet. The derrick was destroyed before the fire was extinguished and the blowout killed. This is the second blowout in this shallow sand, the discovery well, No. 1 Grote, also blowing out when it drilled through it. The latter well was completed in a deeper sand at 1,154 feet.

The deep sand on the southeast side of Barbers Hill received a disappointment during the week in Bennett Petroleum Co.'s No. 2 Kirby, which failed to flow in the sand at a total depth of 5,438 feet. This test is just 100 feet north and a direct offset to the same company's No. 1 Smith, which made a 4,000-bbl. well at 5,272 feet. Humphreys Corp.'s No. 1-C Kirby, completed two weeks ago in this same district, is proving an unusually consistent producer, rivalling Bennett's No. 1 Smith, although the production is not so great. Humphreys' well, which came in flowing an estimated 1,900 bbls. Saturday was holding up to better than 1,600 bbls. daily of pipe line oil.

Other Abandonments

Other abandonments during the week were: Gulf Refining Co.'s No. 13 United Land Co., Sorrento, Ascension Parish, dry at 1,650 feet; Pure Oil Co.'s No. 2 Lost Lake, Lost Lake Dome, Chambers County, cap rock, 3,757 feet; Union Exploration Co.'s No. 1 Esperson, Liberty County, dry, 5,800 feet; Humble Oil & Refining Co.'s No. 3 Sterling, Moss Bluff, Liberty County, anhydrite, 2,956 feet; The Texas Company's No. 4 Rayne heirs, Jennings, 3,178 feet; Yount Lee Oil Co.'s No. 3 Crowley, Jennings, cap rock at 5,650 feet; Calcasieu Oil Co.'s No. 1 Breaux, East Hackberry, heaving shale, 4,566 feet; Edgerly Petroleum Co.'s No. 5 Vincent, Edgerly, an old well deepened at 3,764 feet, where it was dry.

Daily Average Production

Daily average production for the Gulf Coast fields totaled 137,902 bbls. for the week ending January 12. This was a slight decrease, there being very few important changes in any of the fields. In Southwest Texas the continued increase in the new Bruner (Salt Flat) district was responsible for a total increase of 3,649 bbls. for the entire district. Figures by fields are:

GULF COAST

Texas	
Allen Dome	7
Barbers Hill	2,400
Batson	1,313
Big Creek	2,656
Blue Ridge	4,713
Brenham	150
Boling	2,419
Damon Mound	650
DeWalt	6,131
Gayhill*	....
Goose Creek	6,415
High Island	939
Hull	9,827
Humble	5,721
Jasper	20
Markham	275
Nash Dome	1,000
North Dayton	640
Orange	3,334
Orchard	120
Pierce Junction	10,920
Raccoon Bend	1,975
Saratoga	960
Sour Lake	2,887
So. Liberty and So. Dayton	8,121
Spindletop	34,585
West Columbia	7,499
Total this week	115,677
Total last week	114,085
Increase	1,592

*Shut in.

South Louisiana	
Anse La Butte	46
Bayou Bouillon	385
Edgerly	873
Evangeline	785
Hackberry	6,318
Lockport	4,122
Sorrento	1,118
Starks	796
Sulphur	2,800
Sweet Lake	910
Vinton	4,042
Welsh	30
Total this week	22,225
Total last week	24,180
Decrease	1,955
Total Gulf Coast	137,902
Total last week	138,265
Decrease	363

Southwest Texas	
Dale	668
Gonzales	200
Kingsville	252
Luling*	27,612
Lytton Springs	1,132
Refugio	635
Somerset	1,904
Mirando	13,475
Medina County	30
McMullen	45
Total this week	45,953
Total last week	42,304
Increase	3,649

*Including Bruner 13,155, Caldwell County 8,473, Guadalupe 4,324, Larremore 221, Yoast 1,439.

Boling—Fort Bend and Wharton

Gulf Production Co.'s No. 5 Bay, northeast flank, is drilling sand and lime at 3,385 feet. Scott & Peck's No. 1 Armstrong is in sandy shale at 3,525 feet, but drilling is being delayed because of a stuck drill stem. South Texas Petroleum Co.'s No. 1 Fotjeck-Hyde is drilling shale at 3,420 feet. Sun Oil Co.'s No. 4 E. C. Farmer is drilling hard sand at 3,261 feet. The Texas Company's No. 1-A Dipple is drilling sand, shale and lime at 1,955 feet. No. 1-B Dipple is standing as a derrick and No. 1 Pleasant as a rig.

Vacuum Oil Co.'s No. 1 Taylor on the south flank is drilling sandy shale showing oil at 3,037 feet and No. 2 Taylor in gumbo at 2,280 feet.

Barbers Hill—Chambers County

Humphreys Corp.'s No. 6-B Kirby in Barbers Hill is drilling lime at 5,092 feet and should be down to the pay sand within the next 200 feet. This company's No. 1 Cornelia Barber is drilling lime and gumbo at 2,792 feet. Bennett Petroleum Co.'s No. 2 Kirby is being abandoned at 5,438 feet. Although just 100 feet north of this company's No. 1 Smith, the best well ever completed at Barbers Hill, the No. 2 Kirby, would not produce. The latter company's No. 1 Means is drilling gumbo and boulders at 2,051 feet. Joe Bashara's No. 1 Tarbutton is drilling sandy lime at 3,504 feet. Yount Lee Oil Co.'s No. 1 Chambers, southwest flank, is drilling rock at 4,825 feet. This company's No. 2 Richardson has set screen to test at 2,100 feet.

Blue Ridge—Fort Bend County

Blakely & Means are rigged up and ready to start drilling on their No. 2 Blakely. Telshaw Oil Co.'s No. 2 Blakely also is rigged up and ready to drill. Gulf Production Co. is starting drilling in two more tests on the southeast side of the dome, these being No. 14 Luscher and No. 6 Invincible, the latter drilling gumbo at 537 feet. South Texas Petroleum Co.'s No. 3 Lafferty, east side, is drilling gumbo at 1,262 feet. On the south side, Humphreys Corp.'s No. 5 West Schenck is drilling gumbo at 1,205 feet. Superior Oil Corp.'s No. 5 West Schenck is spudding in. Watts Oil Co.'s No. 8 Blakely, north side, has set strainer to test a sand at approximately 2,000 feet.

Big Creek—Fort Bend County

The Texas Company's No. 4 Wheat is drilling sand, shale and lime at 3,253 feet. Gulf Production Co.'s No. 46 Davis, an old well deepening, is drilling below 3,617 feet.

Nash Dome—Brazoria and Fort Bend

Humble Oil & Refining Co.-Rycade Oil Corp.'s No. 1 Wisdom is waiting casing cement to set to test at a total depth of 5,124 feet. If this is a well at that depth it will extend production on the south side 800 feet to the south and out from the dome. Rycade Oil Corp. is preparing to work over No. 21 Wisdom, formerly completed last February flowing 1,000 bbls. daily from sand at 4,177-88 feet. Rycade's No. 24 Wisdom is drilling below 4,113 feet.

Pierce Junction—Harris County

Gulf Production Co.'s No. 7 Cain on the east flank of the dome has set 6⅝-inch casing to test a sand and shale showing oil at 4,515 feet. Navarro Oil Co.-Texas Exploration Co.'s No. 10 Dooley, same side, also is to test a sandy shale at a total depth of 3,855 feet and 6⅝-inch casing has been cemented at 3,838 feet. Further north, another test was being bailed Saturday. This was Shaw-Texas Exploration Co.'s No. 2-D Fitzsimmons which is in a sand at a total depth of 4,188 feet. The latter operators' No. 3-E Fitzsimmons is drilling rock at 3,902 feet. Navarro Oil Co.-Humble Oil & Refining Co.'s No. 1 Dooley is drilling lime at 4,025 feet, and Navarro's No. 3-A Cain is down 5,520 feet. This test has set a string of 6⅝-inch casing at 5,285 feet to protect the hole. Gulf Production Co.'s No. 2 Fitzsimmons-Hamman is drilling at 2,977 feet, and its No. 27 Taylor is down 1,476 feet. H. R. Cullen's No. 5 Howe, which tested

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Lea County Well Flows 165 Barrels

After Two Days' Production at This Rate, Bailer Was Run in Skelly Well and 40 Bbls. of Water Recovered

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Jan. 12.—The Skelly Oil Co.'s No. 1 Joyner, Section 26-25-36, Lea County, New Mexico, flowed 165 bbls. naturally on January 9 and the same quantity on January 10. On January 11 the bailer was run and 40 bbls. of water recovered. The water is believed to be coming in through leaky casing, and it is likely that the 10-inch will be rerun. The Marland Production Co. has given up the hope of going deeper in No. 1 Eaves, Lea County, and has completed it as a gas well. Same company's No. 1 Lynn, 17 miles farther north, has an additional flow of 25,000,000 feet of gas. The Midwest Refining Co. is moving in for an offset to its Hobbs high discovery well.

A show of oil in a wildcat located 13 miles southeast of Pueblo, Colo., caused considerable excitement this week. The Rozella Oil Co., a local concern, found the showing at 1,190 feet and while the well is not encouraging for a producer at this horizon, it has an important bearing on conditions in southeastern Colorado. While bailing failed to lower the 500 feet of oil in the hole, along towards the last the oil became hot and showed a little water. The Continental Oil Co.'s No. 4 Gault-Piatt, on the Wellington Dome, made 756 bbls. initial and is one of the best completions on that structure for some time.

Wyoming wildcats showed an increased number shut down for the winter. Midwest Oil Co. had a 31-bbl. completion in Salt Creek. The Ohio Oil Co. has a 120-bbl. well at Rock River, and a structural test on the Little Laramie Dome in Albany County was abandoned. The Ohio Oil Co. is still trying to shut off bottom water in its wildcat near Cody, and the Midwest Refining Co. has more water in its Waterfall test.

New Mexico

The Marland Production Co.'s No. 1 Eaves, SW NE, Section 19-26-37, 3 miles to the west of the Rhoades well, has been completed as a gasser at 2,944 feet. This well came in in May, 1927, at 2,927 feet, making 50,000,000 feet of wet gas. With deeper drilling the gas increased to 90,240,000 feet with a pressure of 1,350 pounds, but at 3,000 feet it was tied up with a fishing job, two bits being in the hole. After working on the well for many months in an effort to drill deeper in search of oil, the task was given up as hopeless and the well completed as a gasser. The Marland Production Co.'s No. 1 Lynn, NW cor. SE, Section 26-23-36, in the Ochoa district, 17 miles north of the Eaves well, which appears to be running high, is reported to have encountered an additional flow of 25,000,000 feet of gas at 3,540 feet. This well has been showing gas with occasional streaks of oil for some time. At 3,091 feet it was making 15,000,000 feet and at 3,208 feet in gray lime it gauged 25,000,000 feet. Coring has been in progress since the first show and thin streaks of lime containing oil have been cut at intervals.

The Midwest Refining Co. has made a location for its No. 31 Capper, SW cor., Section 3-19-38, on the Hobbs high, an offset on the northeast of its No. 1 State, the discovery well on this structure. The footage is 205 feet each way out of the southwest corner. This means that at least two wells are to be drilled on this high at once, the other being the Ohio Oil Co.'s No. 1 State, NE SE NW, Section 9-19-38, approimately 1 mile to the southwest of the discovery, for which materials are being moved in. A corrected location for the Ohio's other test is in the NE cor., Section 14-22-36, 20 miles south of the Hobbs high and about 5 miles to the southeast of the Gypsy Oil Co.'s No. 1 Ramsey. The Gypsy Oil Co.'s No. 1 Ramsey, SW cor., Section 34-21-36, was plugged back to 3,885 feet, but water was still leaking in and then it was plugged back to 3,856 feet and the water completely shut off. This well had considerable gas at several horizons above the plug. This company's No. 1 Mattern, SW cor. SE, Section 24-21-36, is rigged and about ready to commence spudding. The Empire Gas & Fuel Co.'s No. 1-C State, SW cor., Section 12-21-34, is drilling at 2,610 feet in salt and potash. The Midwest Refining Co.'s No. 13 Farnsworth, NE NE, Section 13-26-36, is drilling at 495 feet in red muddy sand, and its No. 19 Farnsworth, to the northwest, is still idle. The Maljamar Oil & Gas Co.'s No. 2 Pearsall, NE NE, Section 33-17-32, is drilling at 3,463 feet in lime and showed for about 10 bbls. per day at 3,345 feet. Hill & Abel's No. 1 Maechtel, SW cor., Section 5-26-33, is drilling at 4,200 feet in salt, and Henderson, Deter & Blair's No. 1 Jewett & McDonald, SE cor., Section 18-20-34, is drilling at 541 feet in gypsum.

A. D. Morton's No. 1, C NW, Section 29-11-38, Tatum district, is drilling at 1,180 feet in red rock, and the Marland Production Co.'s No. 1 Warren, SW SW, Section 28-20-38, is shut down at 2,930 feet.

Deep Test Northeast of Artesia

In Eddy County, Flynn, Welch & Yates' No. 1 Jackson, C NE, Section 13-17-30, northeast of the Artesia Pool, is shut down at 3,314 feet. It had another show of gas at 3,209-12 feet. Leonard & Levers' No. 1 Haggerty, NE cor. NW, Section 18-16-30, is bottomed at 2,140 feet and fishing, and R. D. Compton's No. 1-C Vandergriff, NE SE, Section 1-17-27, is drilling at 1,514 feet. The Pecos Valley Gas Co.'s No. 1 Vandergriff, SW cor. NE, Section 6-17-28, is shut down at 1,550 feet in salt, and Flynn, Welch & Yates' No. 56 State, Section 6-19-28, is drilling at 2,070 feet in lime. George F. Getty, Inc.'s No. 1 Bates & Martin, C SE SW, Section 31-20-29, is shut down at 342 feet.

In De Baca County, the Transcontinental Oil Co.'s No. 1 McWhorter, SW NW, Section 6-3s-22, La Mora Dome, is bottomed at 910 feet and has succeeded in pulling the 15½-inch casing for which it had been fishing. The Matador Oil Co.'s No. 1 Wood, SW SW, Section 6-4n-20, Salada Creek, is drilling at 595 feet with the 15½-inch at 560 feet, and below a crevice which had caused considerable trouble.

In Chaves County, L. B. Tannehill and others' No. 1 Butler, SE cor., Section 15-12s-24, is moving in. This is 10 miles south of Roswell. The Burton Spencer Oil Co., of Troy, N. Y., is reported moving in for a 4,500-foot test in the C Section 24-7-28, where it has a block of 4,000 acres. Snowden & McSweeney's No. 1 Merchant, NW NW, Section 27-15-23, is still bottomed at 3,500 feet and straightreaming at 3,250 feet.

In San Juan County, the Iowa Oil Syndicate's No. 1 Viles, SE cor., Section 28-29-11, Kutz Canon district, is shut down for boiler repairs at 870 feet, and the Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, is drilling at 550 feet. The Angel Peak Oil Co.'s No. 1 Garland, NE NE, Section 11-28-11, is drilling below 1,800 feet.

In Torrance County, the Bluhall Oil Co.'s No. 1 Kistler, NW SW, Section 7-4n-10e, is drilling at 1,525 feet with the 8¼-inch at 1,450 feet.

Utah

Utah supplied little news of interest this week. The Phillips Petroleum Co.'s No. 1 Shick, C NE Section 16-27-16, on the Barrier Creek Dome in Wayne County, is at an interesting depth and final results should be known soon. At last reports it was drilling in lime at 4,515 feet. The Hermosa formation of Pennsylvanian age was expected at around 4,300 feet, but apparently it has not yet picked up any sand in that horizon. The Maud Ellen Oil Co.'s No. 1, Section 28-3s-21, in Uintah County, is shut down at 1,450 feet in lime waiting for a drill stem sent to Craig for repairs. There are slight shows of oil reported at present depth and the hole is believed to be close to the first objective sand. The Crescent Oil Syndicate has been formed to take over and complete No. 1 McCarthy, SW cor., Section 27-21-19, on the Crescent Dome in Grand County. The hole is bottomed at 1,602 feet and the Mancos shale and at this depth was reported to have showed a little gas. A string of 10-inch will be purchased and run before any more drilling is done. The well was drilled to 1,375 feet last year by the Western States Development Co., and last spring the Intermountain Venture Co. took it over and drilled it to the present depth. The new firm includes F. W. Vogel, president; A. L. Nash, vice president and superintendent; and A. A. Decatur, secretary and treasurer. The Price River Petroleum Co.'s No. 1, Section 16-14-10, in Carbon County, is drilling in red shale at 3,000 feet. It was at first thought this was the red beds, but subsequent developments indicated that it was not. The red shale, which has showings of oil, has been alternating with black and dry sand. The Navajo Petroleum Co.'s No. 1 State, Section 2-20-21, in Grand County, is still shut down at 2,845 feet and will not resume for several weeks due to the water line being frozen. The Utah Southern Oil Co.'s No. 1 Farnsworth, SE cor., Section 29-4s-1e, Uinta County, encountered salt water at 1,920 feet, and is drilling at 2,070 feet in dark oily shale. Same company's No. 1-A J. L. Shaffer, Section 36-26-20, Cane Creek Dome, which was bottomed at 2,580 feet when work was suspended for the holidays, has been unable to resume due to inability of crew to reach location. Transportation from Moab is by way of the Colorado River and an ice jam in the river has tied up the boats.

Colorado

A good showing of oil reported in a wildcat drilling 13 miles southeast of Pueblo, in the county of the same name in south central Colorado, aroused considerable interest among the operators this week. While the development may not prove of much commercial value in this particular well, the showing generally is considered significant as having a bearing on the conditions in the southeastern part of the State. The well is located on the S. P. Shaw farm in the SE NW NW, Section 3-22-63, and is being drilled by the Rozella Oil Co., of Pueblo. Drilling commenced last February in a 10-inch hole with a Star rig. Operations were suspended for the holidays at 1,175 feet and when they were resumed the hole was deepened to 1,190 feet when the oil made its appearance. According to one report, the oil rose about 600 feet in the hole. Seven or eight barrels were bailed out when the machine broke down. At the time, according to this report probably 8 or 10 bbls. of oil were on the sump. The machine was repaired, and on Sunday, January 6, according to another report from a reliable source, there was about 500 feet of oil in the hole and the bailer was run 25 times without lowering the column to any extent. On Monday, there was about 200 feet more of oil in the hole and the bailer was run 12 times without lowering it. The next day the bailer was run a few times without showing any material change, and on Wednesday, the oil bailed out was hot and showed a little water. The hole is cased to 600 feet with 6¼-inch and the remainder is open and was drilled with a 4¾-inch bit. The operators do not expect to drill any deeper until a string of casing is secured and run. The temperature of the oil at last reports and the appearance of a little water were discouraging features. While no test of the oil has been obtained, it appears to be of a light grade and 36 to 38 gravity. The cuttings indicate that the oil is coming from a light gray sandstone. The driller expressed the opinion that the sand is a member of the Dakota series of the Cretaceous period, but others are inclined to the belief that the showing is coming from the Timpas lime and that the Dakota sands and the Morrison have not yet been reached and that these offer the best bet for a producer.

The location of the well is between the Pueblo fold, which lies to the north and extends to the city limits of Pueblo, and the Apishapa anticline, a northwest-southeast fold. There are no surface evidences of a structure at the location, though the well is on a slight hill with an elevation of 30 feet or more above the surrounding area. The greater significance attached to the showing is its relationship to the general line of folding through that area into southeastern Colorado including the Pueblo uplift, the Apishapa anticline, the Table Mesa, Red Rocks and Black Hills structures and may point to the probability of finding oil on plunging noses off of the main line of folding. The Ohio Oil Co. drilled a test on the Pueblo structure in 1924 in its No. 1 Russler, NE NW, Section 25-21-64, 4 miles to the northwest of the Rozella company's well. It found water in the Dakota at 1,025 feet and was abandoned at 1,740 feet in the top of the red beds. Two tests were drilled in 1924 and 1927 near Baxter Station, east of Pueblo, by local interest. One of these on Section 32-20-63, 10 miles to the northwest of the Rozella well, was abandoned at 2,930 feet after being unable to test a show of oil at 2,100 feet on account of a bad hole. The Utah Southern Oil Co. drilled on the Red Banks Dome in SW Section 25-24-61, farther to the southeast, in 1925, and abandoned it at 765 feet in the Lakota, which contained warm water. The Dakota was found at 465 feet. The Marland Oil Co. drilled the Table Mesa Dome on the SE NE, Section 8-30-50, in De Baca County, but abandoned the hole at 2,085 feet, the test disclosing the location of a granite ridge that traverses that area. The Phillips Petroleum Co. drilled the Red Rocks structure in its No. 1 Haskins, NE NE, Section 23-29-56, in Las Animas County, and abandoned it on account of a bad hole at 2,575 feet. However, prospects were not encouraging for oil production when operations were suspended.

Good Well in Larimer

One of the best wells completed on the Wellington Dome in Larimer County for some time was finished the day before the Union Oil Co. of California transferred its properties to the Continental Oil Co. This was its No. 4 Gault-Piatt, NW NE, Section 7-9n-68. The sand was topped at 4,360 feet and drilling stopped

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In slack periods and in flush periods, in fat years and lean, Halliburton has maintained the same high standards of service and efficiency—constantly making experiments, adding equipment, improving methods. From its inception it has been an important and constructive influence in the industry.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma

Lawndale Looms as Growing Factor

Considerable New Work Is Now Being Initiated. May Not Show Substantial Production Until Late in the Year

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif. Jan. 12.—The past week saw a further weakening in the refined oil market and witnessed the initiation of considerable new work in the recently discovered fields at Lawndale and Kettleman Hills. Although it is generally believed that the recently discovered Lawndale Field of Los Angeles basin will not show substantial production until late in the year, this field may become a factor in State production a lot sooner than many anticipate. Operators have been exceptionally active and it is believed at least 25 strings will be in operation before another month closes. The extent and productivity of the Lawndale Field is still a matter of conjecture but it is believed subsequent work will reveal a field of great magnitude. The extreme depth at which the initial completion was finished 5,897 feet, has led operators to believe it will be several months before further developments of importance materialize. Lawndale may surprise as micropaleontologists are of the opinion the oil being produced at Lawndale is coming from the Miocene formation. This is of special importance because it indicates the possibility of subsequently producing from the overlying Pliocene. If this preliminary paleontological research is correct, and every indication points to its accuracy, we may anticipate the possible existence of Pliocene production on the apex of the structure, believed to be located east of the discovery well. The possible existence of a shallow sand is based solely on geological deduction and, while this condition may not actually exist, it has some basis in fact. It is at least worthy of consideration because of the continuity and regular sequence of geological formations in other Los Angeles basin fields. The outcome of work in Lawndale during the next 60 or 90 days will undoubtedly be watched by the entire industry because if shallower production is ultimately developed it will throw a different light on the local production situation as we will have two zones in this field to cope with instead of the one already proven. It is impossible to predict the depth at which Pliocene production may be anticipated on top of the structure but if a new zone is found it will be somewhere around the 4,000-foot level, in which event this field will become a factor in production several months in advance of preliminary estimates.

Lawndale Possibilities

The Lawndale district of Los Angeles basin is rapidly assuming the appearance of a well established oil field. Considerable activity has already taken place and interest in the possibilities was further stimulated by the showing made by the San Clemente Oil Co.'s No. 1 Peck, recently taken off production and deepened. No. 1 Peck, the discovery well at Lawndale, flowed at the rate of 1,500 bbls. a day on a preliminary production test early in the past week but was subsequently killed because of water trouble which has characterized practically all work in this section. No. 1 Peck was originally completed doing 175 bbls. per day from 5,814 feet in July, 1928, and has been consistently flowing 160 bbls. per day since completion. When the Smith Brothers subsequently brought in their No. 1 Peck flowing 1,155 bbls. per day from 5,897 feet the San Clemente Oil Co., which is controlled by the Smith Brothers, considered it advantageous to open up a little more hole in the hope of stimulating production in the original discovery well.

The first project drilled within the present Lawndale Field was No. 1 Johnson, which the Smith Brothers carried down to 6,215 feet where work was suspended because of the inability to effect a satisfactory water shut off. This well is approximately 1,000 feet north of the initial completion and while commercial production was never developed it blew oil over the derrick and provided sufficient encouragement to stimulate additional prospecting. This district has been prospected off and on for a number of years but previous to the pioneernig done by the Smith Brothers only one well showed unusual promise. This was the Winwell Oil Co.'s project a little less than 2 miles southeast of the actual discovery. Other tests showed some evidences of oil and gas and in two or three instances exploratory work was marked by disastrous blow outs, but the Winwell test was the only well to produce any quantity of crude. Water trouble prevented a satisfactory completion and work was only suspended after a long and valiant attempt to overcome this insurmountable obstacle.

Town Lot Area

As might be expected, the new Lawndale Field contains a town lot area with many diversified holdings. This condition will ultimately result in an intensive drilling campaign which may reach its peak during the latter part of 1929, or possibly earlier if a shallow zone is picked up. Operators will find the Lawndale town lot area somewhat more congested than other similar areas already developed, as many lots in this district are only 40 feet in width by 60 feet in depth. This will require the careful location of wells as allowances must be made for lease tankage and equipment. The smallness of these lots accounts in a large extent for the determined effort being made by future drillers to acquire two adjoining lots when possible. Ten rigs are already up or under construction immediately adjacent to the Peck and Johnson properties held under lease by the Smith Brothers and there are about 15 additional locations staked. The Petroleum Securities is rigging up its first derrick on the Brown property, the lease of which ultimately calls for the drilling of at least four wells. The Union is making preparations to start four new wells in this area as soon as practicable. No. 1 Higby is being rigged up and material is on ground for derrick construction for one additional well on this property and two more on the Root lease. J. E. O'Donnell is erecting a new rig at Sixth and Lawn Streets, which is an offset to the Union's No. 2 Root.

The Standard is putting the finishing touches on two new rigs and both projects, No. 1 Vance and No. 1 Thomas, will be making hole within 15 days. The Richfield Oil Co. also has two new wells under way and both No. 1 Paul and No. 1 City, should be spudded in with the initiation of actual drilling operations by the Union and Standard. G. J. Magenheimer has entered the Lawndale Field and will drill his first well at Inglewood and Shirley Streets. The Superior has located its first Lawndale project on the Ritter property near the intersection of Inglewood and Rosecrans Avenue and rotary equipment is being moved in. The Smith Brothers have just spudded in No. 1 Durard, approximately 1,100 feet south of the discovery well, and tentative plans call for two more wells immediately. The Pacific Western Petroleum Co., which recently acquired the properties and holdings of the Petroleum Securities, has just staked locations for two new wells on the Howland property and an early spud is expected. The extent and direction of the Lawndale structure will remain an unknown factor until another well or two is on production. It is believed the top of the structure is located east of the discovery well.

Santa Fe Springs

Development work at Santa Fe Springs was marred by a gas blow out and fire which destroyed several rigs. General Petroleum's No. 145-C blew out from 3,380 feet and immediately took fire. The gas probably originated in the 2,000-foot dry gas zone which resulted in several catastrophes during the early development in 1923. This is the first instance where this zone has caused trouble since the present deep zone development got under way as it has been depleted to a large extent. A fishing job had developed in No. 145-C just previous to the blow out and the crew ran in an overshot and had just brought out two stands of drill pipe when it blew in with almost no warning. The well inundated surrounding territory with great quantities of mud, sand and water and severely handicapped efforts to bring it under control. This well burned for about 36 hours before sanding up.

One of the most interesting features was the probable extensive underground channeling which most have extended for more than 100 feet as George F. Getty's No. 20 started blowing from the same shallow dry gas zone a short time after the General Petroleum's well blew in out of control. The two wells were burning simultaneously, Getty's being ignited by the flame from the General Petroleum's No. 145-C. Getty's No. 20 was down 4,007 feet with a string of 18-inch landed and cemented at 1,026 feet when it started blowing mud, sand and water in sympathy with the General Petroleum's gasser. This well is the second gas fire which has characterized George F. Getty's recent operations at Santa Fe Springs. His first wild well was No. 17 Nordstrum, which burned for 48 consecutive days before being capped. This well, when brought under control on November 3, immediately began flowing 5,500 bbls. a day and is still producing 5,400 bbls. of clean oil and approximately 10,000,000 feet of wet gas daily.

New Completions

There were several new wells chalked up at Santa Fe Springs during the week and a check indicates the probable completion of several more within a few days. The Union finished two new wells, Nos. 32 and 33 on the Bell lease, but both were wet, the cut in each approximating 15 per cent. Both were finished in the Nordstrum zone, the former tanking 4,675 bbls. daily from 5,415 feet and the latter 5,280 bbls. per day from 5,401 feet. The Wilshire Oil Co., which opened up the deep zone for development, successfully finished No. 1-A Crawford early in the week doing 3,400 bbls. of clean 34.6 gravity oil daily from the Buckbee zone at 5,875 feet. This well was finished with a 6⅝-inch oil string carrying 235 feet of perforated and was cemented through perforations at 5,640 feet. The General Petroleum offset its gas blow out in No. 145-C by finishing an exceptionally good well when No. 179-E was brought in doing 3,925 bbls. of exceptionally clean

NEW MUSKEGON, MICHIGAN, WELL ESTIMATED 2,000 BARRELS INITIAL

By Special Correspondent

MUSKEGON, Mich., Jan. 12.—A new well which will make about a 2,000-bbl. initial producer in the Dundee formation led the list of 11 completions in the Muskegon and Laketon Township areas of the Muskegon Field during the past week.

The new large producer is located in the area between previous production in Muskegon and Laketon Townships, where the completion of several large oil wells during the past two weeks has overtaxed the Dixie Oil Co.'s lines and necessitated the laying of a new 4-inch line. Completion of a part of this line and connection of some of the large new wells more than doubled the pipe line runs of the field, setting a new high record of 4,500 bbls. for two successive days.

Wells including the new large producer in Laketon Township and others which have not yet been allowed to flow at their capacity since their completion because of lack of facilities for taking away the oil are expected to keep the daily pipe line run up to about 4,000 bbls. for some time. This is double what it was during November.

The new well, Eureka Gas and Oil Co.'s No. 1 Hewitt, SE NE Section 12-10-17, Laketon Township, made 180 bbls. an hour from the Dundee formation at 2,021 feet. It is estimated about 2,000 bbls. a day as an initial producer.

Oil was first struck at 2,020 feet a week before the well was drilled into the pay sands. It made 175 bbls. in 12 hours and was shut in to await additional field tankage. It filled more than 600 bbls. of tankage in less than seven hours and was again shut in for lack of facilities after it had been drilled into the pay sands about a foot. It will not be drilled deeper for fear of striking the bottom water.

Three Oil Producers

There were 10 other completions in the Muskegon Field during the week, of which three were oil producers and seven were dry holes. The producers are in Muskegon Township. Two were completed in the Dundee formation and one in the lower Traverse pay sands.

The largest was the Concord Oil & Gas Co.'s No. 1 Giles, NW SE Section 7-10-16, which came in at 2,020 feet and made 200 bbls. over night. It was shut in for lack of field tankage and will be drilled about two feet deeper. It is estimated good for 500 bbls. a day as it stands.

The Diamond Oil & Gas Co.'s No. 1 Jager, SE SE Section 5-10-16, came in at 2,064 feet for about 50 bbls. of oil and 1,500,000 feet of gas a day.

The Shoup Oil & Gas Co.'s No. 1 Shoup, NW NW Section 8-10-16, first completed as a small pumper in the upper Traverse pay sands several months ago, was drilled into the lower Traverse pay sands at 1,905 feet and will make 50 bbls. a day without a shot.

Five of the seven dry holes were in Muskegon Township. Three are dry in the Dundee formation and two will be plugged in the upper Traverse pay sands.

Maire-Caswell-Kidder's No. 1 Pappas, NW SE Section 4-10-16, was dry at 2,095 feet in the Dundee. The Commonwealth Co.'s No. 1 Trierweiler, NE NE Section 6-10-16, also was dry in the Dundee at 2,083 feet. No. 1 Peterson, SE SE Section 4-10-16, drilled by the Ottawa Oil Corp. and the Crude Oil Co. of Michigan

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34.7 gravity oil daily. This well definitely proves the existence of clean production in the upper part of the Nordstrum zone as drilling was concluded at 4,991 feet and a string of 6⅝-inch landed at 4,920 feet. The Bandini Petroleum's No. 7 was swabbed in wet for the second time at 5,515 feet and another cement job will be undertaken.

The Texas Company, which recently completed No. 5 Foix as an exceptionally large gas well, added another producer on this lease when No. 6 turned loose from an even 5,400 feet. The company's new producer showed an initial daily production of 6,450 bbls. of 34.1 gravity oil and 7,000,000 feet of wet gas daily. No. 5 Foix, which started off last week doing 25,000,000 feet of gas and 1,900 bbls. of crude, is flowing 2,450 bbls. of clean 35.4 gravity oil and 12,000,000 feet of gas daily. Oscar Howard, who experienced considerable sucess when Santa Fe Springs was originally developed in 1923, is running two strings on the Hathaway lease, and both wells should be tanking oil soon if the deep zone underlies this property. Howard consummated a deal with the Richfield Oil Co. a few months ago whereby the latter undertook to develop the former's Bell property on a 50-50 basis. The Richfield has already finished two wells on Oscar Howard's Bell lease, No. 1 showing an initial daily production of 6,840 bbls. and No. 2 a little better than 8,000 bbls. The St. Helens Petroleum killed its No. 2 Hill, which showed an excessive water cut on a preliminary test late in December, and it is the intention to carry this well to the Buckbee zone.

Long Beach

Daily production at Long Beach, which has been gradually declining for a few weeks, will probably continue sliding off unless the drop is arrested later in the year as a result of drilling operations in the Los Cerritos town lot area. It has not yet been definitely determined whether commercial production will ultimately be developed in this northwest extension which contained two thin shallow zones but it would not be surprising if this area came into the limelight. The General Petroleum's No. 1 Ransome, which was expected to throw considerable light on this section, tested wet and another attempt will be made to effect a satisfactory water shut off. On the Fulton property the General Petroleum's No. 1 came in under a natural flow doing 790 bbls. of relatively clean 28.4 gravity oil daily from 5,388 feet. Several good wells have been finished in the older section and the 164 strings in operation are ample assurance of additional completions from time to time. The Petroleum Co. chalked up two satisfactory completions when No. 4 Beck was brought in flowing 1,970 bbls. of clean 27.9 gravity oil daily, and No. 2 Hawkeye, 1,450 bbls. of clean 27.2 gravity oil. The former was carried down to 6,012 feet and finished with a 5¾-inch oil string cemented through perforations at 5,587 feet, while the latter was bottomed at 6,090 feet and finished with a 6⅝-inch oil string carrying 634 feet of perforated.

Dabney & Johnson also chalked up two new wells in the Long Beach Field and increased their daily production 3,765 bbls. No. 15 came in under a natural flow doing 2,590 bbls. of clean 28.1 gravity oil daily from 6,420 feet, while No. 22 registered an initial of 1,175 bbls. from 5,641 feet. The Richfield finished two new wells, one of which, No. 2 West Coast, was a very satisfactory producer. This well came in under a natural flow and tanked 2,520 bbls. of clean 26.5 gravity oil from 6,259 feet during the initial 24-hour production test, the hole having been finished with a 5¾-inch oil string. No. 3 Simplex, which was carried down to 6,832 feet and finished with a 6⅝-inch oil string carrying 813 feet of perforated, came in flowing 1,480 bbls. of clean 28.7 gravity oil daily. The Richfield, which has been exceptionally successful in its deep zone development at Long Beach, is rapidly concluding its development program in this field and the crews as available are being transferred to Santa Fe Springs. The Rio Grande Oil Co. finished its No. 2 R. L. M. in the shallow zone early in the week at 4,643 feet, from which depth it showed an initial daily production of 330 bbls. The Signal Syndicate's No. 10, which was also finished in the upper sand, is being listed as a satisfactory completion at 3,647 feet, although current production, 290 bbls. daily, is cutting approximately 21 per cent. The Shell successfully finished No. 7 Cherry Hill a few days ago and this new well, bottomed at 6,250 feet, came in flowing 1,126 bbls. of 27.2 gravity oil daily. Boyd & Hammon successfully completed their No. 3 and while it was brought in flowing 760 bbls. daily from 5,968 feet the output is still cutting about 15 per cent and may require corrective work.

Elwood

Barnsdall and Rio Grande's No. 2 Doty at Elwood came in flowing 4,000 bbls. daily from 3,311 feet. The oil tests 39 degrees gravity.

The Barnsdall and Rio Grande Oil companies, which are jointly developing the Bell and Doty leases in the prolific Elwood Field of Santa Barbara County control the entire productive acreage. None of the various wells being drilled around the holdings of the Barnsdall and Rio Grande has encountered the Bell Luten sand and the possibility of success in extending the productive limits of the Elwood Field by outsiders appears very slim. Some of these wells may ultimately find production in the deep Sespe formation which underlies the present productive Vaqueros. Barnsdall has had considerable success in its development work at Elwood and its progressive drilling is gradually but consistently opening up an additional thickness of oil sand with each new well completed. Instead of drilling until bottom water was encountered during the early stages of development the Barnsdall is gradually determining the total thickness of the productive Vaqueros formation by opening up a little more sand in each new well.

No. 1 Elwood Acres, in the extreme eastern part of the Elwood Field, has not yet encountered a sufficient thickness of oil bearing formation to result in commercial production and, while the Barnsdall's field department would naturally welcome substantial production in this well, it is really an outpost and was located with this idea in mind. The Bankline Oil Co. has suspended drilling operations on its No. 1 A. & D. at 4,000 feet and this well, which is north of the Barnsdall's discovery well, will be allowed to stand inactive pending developments. The Bankline's next undertaking will be on the Duncon ranch where the first well is scheduled for an early spud. Dunlap & Knapp have also suspended drilling operations but this was to be expected as this project is in close proximity to the Barnsdall's No. 1 Elwood Acres, several hundred feet deeper. J. E. O'Donnell was rotating a few days ago in his No. 1 Campbell at 4,140 feet and since no developments of importance have been logged the outlook is rather discouraging. This well is several thousand feet beyond what will probably be the eastern limits of production. The Petroleum Securities is rotating in its No. 1 Storke at 4,394 feet with no favorable indications. This well is approximately 3 miles east of the Barnsdall's discovery well. Ted Martin is landing a string of pipe in his No. 1 Chapman at 3,750 feet but field reports indicate this is being done for protective purposes only.

Rincon

The potentiality of the deep zone in the Rincon Field of Ventura County is still a matter of conjecture and will require further prospecting due to the unfavorable outcome of the Richfield Oil Co.'s No. 1 Mixley, put on a production test early in the week. The Richfield's geological department anticipated a good producer as considerable gas and oil was in evidence previous to completion but when put on a preliminary production test it showed an initial of only 250 bbls. daily instead of 1,000 bbls. as expected. The failure of No. 1 Miley to result in larger production may possibly be due to mechanical trouble as this well has experienced all the vicissitudes incident to exploratory work. The Richfield's second deep test passed the 6,400-foot level and the pay is expected momentarily. This well will probably determine the potentiality of the deep sand at Rincon and decide the policy of operators hoping the lower zone will yield substantial production. The several upper zones have proven distinct disappointments and many wells will never pay out unless deeper drilling is successful. The General Petroleum decided several weeks ago to determine the possibility of developing deep production for its own benefit and selected No. 3-A Hobson as a deep test. Exceptionally fast footage has been made with the result this hole is already below the 5,650-foot level.

Ventura Avenue

One new well was completed in the Ventura Avenue Field and since there are about five additional projects on the verge of completion it is likely two or three more will be finished within 10 or

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IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
California Western Oil Co., No. 1 Elkins, Ventura Co.	28- 4-19	2,951	suspended
Exline, Emma, No. 1 Saticoy, Ventura Co.	33- 3-21	2,412	fishing
Ohio Oil Co., No. 1 Saticoy, Ventura Co.	32- 3-21	4,806	fishing
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	4,250	hd. sd. drilling
American Oil Co., No. 1 Caramillo, Ventura Co.	33- 3-20	660	hd. sd. drilling
Star Pet. Co., No. 2 Santa Ventura Co.	13- 3-23	6,775	resume work
Boisa Chica, No. 1 Temescal, Ventura Co.	4- 4-18	653	sd. drilling
Miley, E. J., No. 2 Casitas, Ventura Co.	12- 3-21	785	suspended
Shell, No. 1 Marr, Simi	31- 3-17	1,000	hd. sd. drilling
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	3,206	br. sh. drilling
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	3,530	br. sh. drilling
Milham Explt'n., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explt'n., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well
Milham Explt'n., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well
Milham Explt'n., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well
Milham Explt'n., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well
Milham Explt'n., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well
Milham Explt'n., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explt'n., No. 8 Buttonwillow, Kern Co.	16-28-23	4,500	suspended
Doheny-Stone, No. 3 Bisbury, Kern Co.	7-29-24	4,631	cleaning out
South. Calif. Gas Co., No. 1 Buttonwillow, Kern Co.	4-28-23	4,272	suspended
South. Calif. Gas Co., No. 2 Buttonwillow, Kern Co.	27-28-23	Rig	suspended
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	6-28-23	901	sd. sh. drilling
Richfield Oil Co., No. 1 Semitropic, Kern Co.	21-26-22	4,760	mud off gas
Richfield Oil Co., No. 2 Semitropic, Kern Co.	36-27-23	....	location
Pacific Eastern, No. 1 Union Ave., Kern Co.	6-30-28	5,640	suspended
Pacific Eastern, No. 2 Union Ave., Kern Co.	6-30-28	4,500	suspended
Pacific Eastern, No. 3 Union Ave., Kern Co.	6-30-28	4,443	gas, shut in
Pacific Eastern, No. 5 Union Ave., Kern Co.	5-30-28	4,991	suspended
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	3,130	suspended
General Pet., No. 3 Edison, Kern Co.	5-30-29	3,897	abandoned
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	770	gr. sd. drilling
Midway Northern, No. 1 Edison, Kern Co.	29-29-30	3,841	suspended
Deizel, S. A., No. 1 Delano, Kern Co.	4-26-27	3,193	cleaning out
Elmer Oil Co., No. 1 Shafter, Kern Co.	8-28-25	5,490	gr. sd. drilling
Standard, No. 1 San Emidio, Kern Co.	35-11-22	3,793	fishing
Union, No. 1 San Emidio, Kern Co.	5-10-21	1,614	fishing
Perry, C. V., No. 1 McFarland, Kern Co.	34-26-26	1,900	bl. sh. drilling
Fresno Madera Oil Co., No. 1 Clovis, Fresno	18-12-21	4,194	abandoned
Currency Pet. Co., No. 1 Vineyard, Fresno Co.	28-21-14	950	bl. sh. drilling
Thomas Pet. Co., Well No. 1, Fresno Co.	32-22-16	....	location
Union, No. 1 Huasna, San Luis Obispo	34-32-15	3,232	redrilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	2,880	reaming
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	3,300	br. sh. drilling
Dollar Oil Co., Well No. 1, San Luis Obispo Co.	13-32-22	Rig	suspended
Sequoia Oil Co., Well No. 2, San Mateo Co.	15- 7- 5	1,605	suspended
Sunset Pacific, No. 1 Saratoga, San Mateo Co.	13- 7- 4	Rig	suspended
Shell, No. 3 Petaluma, Sonoma Co.	29- 5- 6	2,182	abandoned
Calhoma Oil Co., No. 1 Livermore, Alameda Co.	9- 3- 3	1,470	hd. sd. drilling
Foster & Hammill, Well No. 1, Alameda Co.	21 3- 3	409	hd. sd. drilling
R. Y. Hanlyn, Well No. 1, Alameda Co.	3- 5- 2	360	suspended
Shell, No. 1 Guadalupe, Santa Barbara Co.	36-10-35	790	hd. sd. drilling
Shell, No. 1 Goleta, Santa Barbara Co.	36- 5-31	886	skid rig
Standard, No. 1 Point Conception, Santa Barbara Co.	....	Rig	rigging up
Standard, No. 1 Point Arguello, Santa Barbara Co.	X- 7-25	742	gr. sd. drilling
Bankline Oil Co., No. 1 Mesa, Santa Barbara Co.	X- 4-27	....	location
Tepesquit Oil Co., Well No. 1, Santa Barbara Co.	3- 9-32	2,710	suspended
Becker, Geo. F., No. 1 Summerland, Santa Barbara Co.	33- 4-25	3,090	suspended
Channel Oil Co., Well No. 1, Santa Barbara Co.	29- 4-27	6,304	sd. sh. drilling
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	3,440	sd. sh. drilling
Southwest Prod. Co., No. 1 Gilam, Santa Barbara Co.	2- 4-28	2,207	rd. sd. drilling
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	380	redrilling
Nuna Oil Co., Well No. 1, Colusa Co.	19-15- 5	400	suspended
Superior Oil Co., Well No. 1 Calivada, Colusa Co.	31-15- 4	1,011	suspended
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	redrilling
Kuhns, H. L., Well No. 1, Merced Co.	9-12- 9	1,550	hd. sd. drilling
Angiola Oil Co., No. 1 Angiola, Tulare Co.	27-22-23	2,301	hd. sd. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Hurst Oil Co., No. 1 Inglewood, Los Angeles Co.	28- 3-14	122	suspended
Mont. Park Oil Co., No. 1 Browning, Monterey Park	26- 1-12	4,420	suspended
Mont. Park Pet. Co., No. 1 Jepson, Monterey Park	25- 1-12	3,937	suspended
Dollar Oil Co., No. 1 Bell, Los Angeles Co.	22- 2-12	4,190	gr. sd. drilling
Associated, No. 1 Taylor, Los Angeles Co.	33- 2-12	5,781	sd. sh. drilling
Rio Grande, No. 1 Downey, Los Angeles Co.	34- 2-12	1,041	hd. sd. drilling
Empire Drlg. Co., No. 1 Bell, Los Angeles Co.	14- 2-12	5,470	abandoning
Continental Oil Co., No. 1 La Mirada, Los Angeles Co.	10- 3-11	5,840	gr. sd. drilling
Shell, No. 2 Mission, San Fernando	4- 2-15	5,692	testing
Security Pet. Co., No. 1 Lynwood, Los Angeles Co.	13- 3-13	5,333	suspended
Richfield, No. 1 Maywood, Los Angeles Co.	13- 2-13	3,055	rainbows
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	2,982	suspended
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	25- 3-17	1,500	br. sh. drilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,081	suspended
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Richfield Oil Co., No. 1 Puente, Los Angeles Co.	9- 2-10	3,350	oil sand
Calif. Eastern, No. 1 Wickham, Los Angeles Co.	32- 5-17	2,860	oil sand
The Texas Company, No. 1 Anaheim, Orange Co.	35- 4-10	3,250	hd. sd. drilling
Bastanchury Ranch Co., Well No. 1, Orange Co.	21- 3-10	Rig	suspended
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,482	suspended
Western Drlg. & Prod. Co., No. 1 Newport, Orange Co.	18- 6-10	4,425	gr. sd. drilling
Hall Pet. Co., No. 1 Murrietta, Riverside Co.	23- 7- 3	931	fishing
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,071	suspended
Davenport O. & G. Co., No. 1 San Marcos, San Diego Co.	30-12- 8	892	suspended
Turner, S. E., No. 1 Escondido, San Diego Co.	25-12- 2	1,597	hd. sd. drilling

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	428,954
Diesel and gas oil	172,500	24,643	.....	.....	172,500	72,180
Gasoline	353,368	50,481	590,175	84,311	943,543	440,840
Coastwise—						
Crude oil	455,450	65,064	555,154	79,308	1,010,604	714,792
Fuel oil	472,899	67,557	229,016	32,717	701,915	978,244
Diesel and gas oil	1,430	1,430	36,037	5,148	46,467	160,343
Gasoline	256,347	36,621	368,499	52,643	624,846	565,475
Kerosene	678	97	.....	.....	678	10,452
Naphtha distillate	.....	.....	.....	.....	.....	30,500
Exports—						
Crude oil	144,903	20,700	.....	.....	144,903	54,100
Fuel oil	373,244	53,321	264,027	37,718	637,271	1,440,580
Diesel and gas oil	100,020	14,289	65,140	9,306	165,160	91,859
Gasoline	308,614	44,088	310,997	44,428	619,611	216,422
Kerosene	7,759	1,108	97,640	13,949	104,399	138,492

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	93,515
Gasoline	75,820	10,831	77,874	11,125	153,694	154,238
Coastwise—						
Fuel oil	.....	.....	.....	.....	.....	312,269
Diesel and gas oil	.....	.....	.....	.....	.....	1,478
Gasoline	50,168	7,167	89,072	12,725	139,240	158,465
Kerosene	.....	.....	4,280	611	4,280	29,862
Exports—						
Fuel oil	.....	.....	.....	.....	.....	282,428
Gasoline	307,813	43,977	150,977	21,568	458,790	263,009
Kerosene	68,030	9,719	.....	.....	68,030	.....

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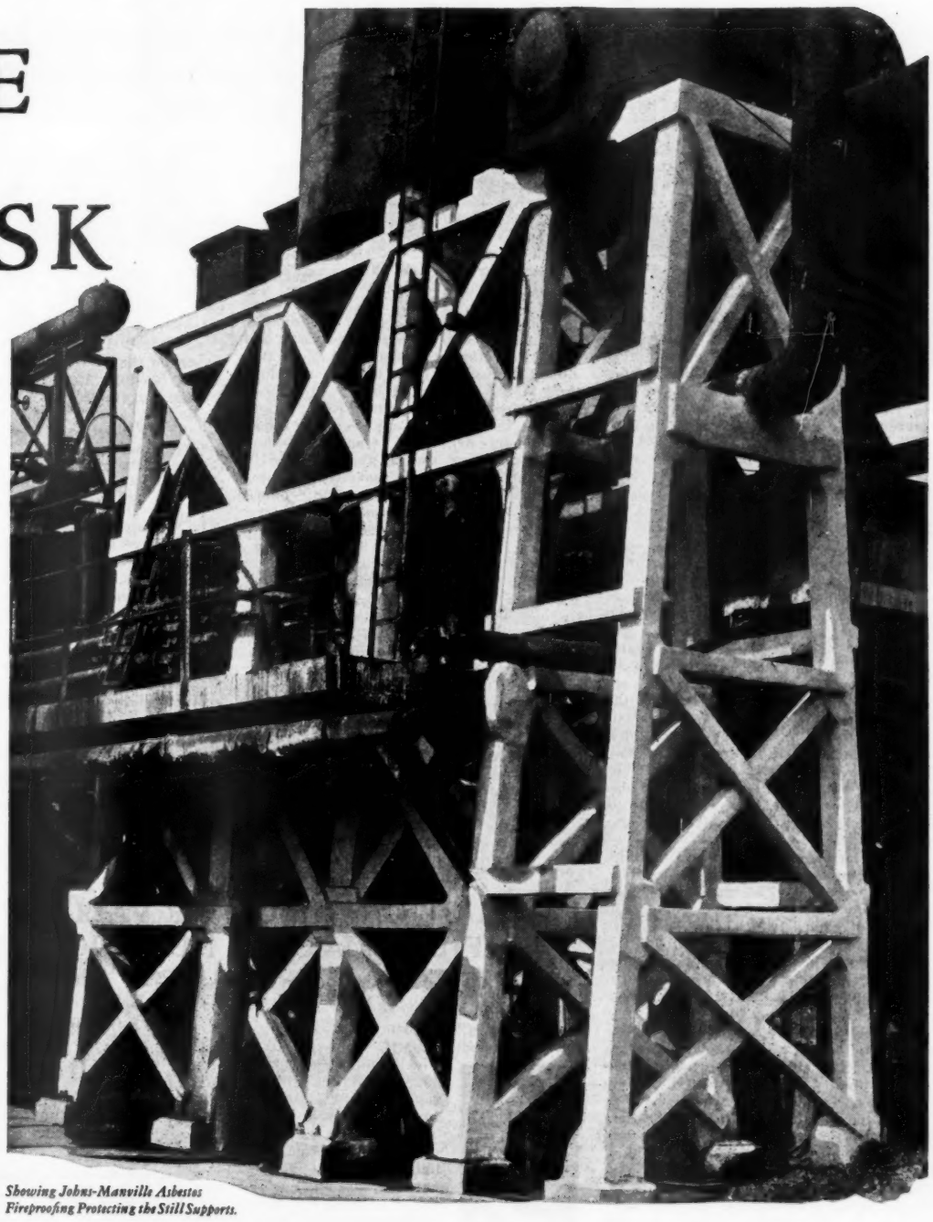

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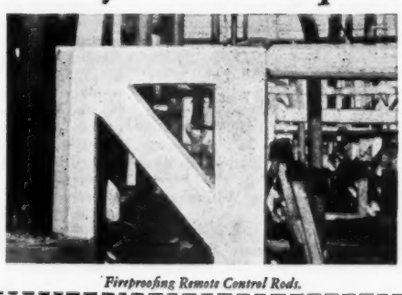

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SSP-41-4

Pennsylvania Well Leader in East

Butler County Completion Came in Doing 20 Bbls. an Hour, Since Dropped to 10 Bbls. Hourly. Two Others Near Sand

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Jan. 14.—Except for one very fair producer, the eastern fields present a dearth of new completions. A stimulus was given to the producers of Pennsylvania crude by the increase of price posted by the Seep Purchasing Agency. The market has at last reached the point set by eastern operators as the price necessary for profitable development, and it has reflected in the increased number of new locations and rigs.

Though it is unusual, the best producer for the week happened in southwest Pennsylvania. No. 2, brought in by the Phillips Oil & Gas Co. on its lease on the Harvey farm, Buffalo Township, Butler County, came in at 20 bbls. an hour, in a stray sand, but has since dropped to about 10 bbls. an hour, probably occasioned by the extremely cold weather. No. 1 on this farm blew in several months ago at between 50 or 60 bbls. an hour and is still a fair producer. This well is about 600 feet southwest of No. 1. There are two other wells at about the top of the sand which are expected in soon and may extend the limits of this new pool, the Hughan about 1,000 feet south and the J. C. Trees the same distance to the north. The MacFarland and the Penrose wells are not producing much at the present time, also probably due to the cold, as this oil is peculiarly heavy in wax and very bright in color.

On Patterson Creek, Morris Township, Greene County, the Carnegie Natural Gas Co. completed No. 6 on the J. S. Rutan farm, showing for a 10-bbl. pumper in the 30-foot sand. In Robison Township, Allegheny County, the Elizabeth Oil Co. has completed in the Fifth sand a test on the P. & K. Petrie farm. It is a natural producer good for 5 bbls. a day.

Southeast Ohio

The best well reported from the southeast Ohio fields was completed in the SW Section 5, Hopewell Township, Muskingum County, where the A. H. Heisey Co. drilled No. 1 on the Burrier farm to the Clinton which made 70 bbls. the first 24 hours after shot.

In Section 1, Washington Township, Hocking County, the Preston Oil Co. completed a second test on the Cynthia A. Marks farm, showing for a very light pumper in the Clinton sand. In the SE Section 21, Perry Township, Westbrook Brothers have a duster in the Clinton sand on the Thomas Wolfe farm.

Fair Pumper in Medina County

In Lot 6, Section 16, Chatham Township, Medina County, the Oko Oil & Gas Co. has a 20-bbl. pumper at No. 20 on the T. W. Brinker farm. In the Fisher Pool, Section 87, Athens Township, Athens County, George and others have a duster in the Berea grit at No. 7 on the E. B. Irwin farm. In Salisbury Township, Meigs County Sutton Brothers have a 2-bbl. pumper in the Berea grit at a second test on the Williamson-Moore farm.

In Section 28, Independence Township, Washington County, Herman Schramm and others completed their No. 1 to the Salt sand at 1,041 feet and have a gasser estimated good for 1,243,000 feet. In the same county, but along the Little Muskingum River, Ludlow Township, Homer Newhart and others completed No. 2 on the Charles Payne farm, Section 16, to the Berea at 1,741 feet and it made 2 bbls. natural the first 24 hours along with gas estimated at 40,000 feet.

Perry County

The Pure Oil Co. completed its No. 2 on the Katherine Moore farm, NE Section 20, Harrison Township, Perry County, to the Clinton and after shot it produced 30 bbls. the first 24 hours. In this same township and county, the Northern Development Co. and others completed their test on the Pemberton Brothers farm to the Clinton at 3,490 feet and have a well that produced 15 bbls. the first 24 hours after being shot.

In the northeast quarter of Section 17, Sutton Township, Meigs County, C. D. Sloan and others completed No. 2 on the James E. Stobart farm to the Cow Run sand at 633 feet and it is dry. In Chester Township, of this county, sub Section 31, the Citizens Trust & Savings Bank of Columbus drilled No. 4 on the Wesley Genheimer farm to the Berea at 1,870 feet and after shot it produced 5 bbls. the first 24 hours. In this same county, Sutton Township, southeast quarter section, O. R. A. Tyree and others have spudded in and started to drill their No. 2 on the Martin Ebersbach farm.

In Section 10, Fallsbury Township, Licking County, the Emerald Petroleum Co. completed a test on the J. E. Martin farm to the Berea grit at 765 feet and it produced 10 bbls. the first 24 hours after shot, and will probably be a 2-bbl. producer. In the same township and county, the Preston Oil Co. completed its No. 4 on the Waylan Ascraft farm to the Berea grit at 750 feet and it produced 4 bbls. the first 24 hours after shot, and will be about a 1-bbl. producer.

Vinton and Athens County

In Section 5, Knox Township, Vinton County, the Co-operative Oil Co. has a 7-bbl. pumper in the Berea grit on the William Beckley farm. In Section 1, same township, Townsend and others have a gasser in the same formation on the David Houston farm. In Lot 51, Athens Township, Athens County, Gross and others are drilling No. 7 on the B. Irwin farm. In Sutton Township, Meigs County, Lee Stout and others have a Berea grit, duster on the Charles Woodyard farm.

In Section 17, Seneca Township, Noble County, Rick Brothers and others have a rig up on the J. W. Eick farm. In Jackson Township, Urban Nau & Co. are drilling on the L. C. Wilson farm. In Section 32, Harper Brothers are drilling on the I. N. Harper heirs' farm. In Center Township, Richard L. Moore & Co. have the rig completed for another test on the Lemuel Moore farm.

Starting New Work

In Washington district, Calhoun County, the Pure Oil Co. has made locations on the A. W. McCallin and W. F. McCallin farms. In Center district, L. F. Bickel has started to drill on the Minnie Hamilton farm. In Lee district, F. F. McIntosh and others have started to drill on the John I. McCoy farm. In the same district, W. H. Bickel is rigging up on the Mary Hays heirs' farm. F. F. McIntosh is building a rig on the J. M. Morgan farm.

West Virginia

In Geary district, Roane County, the South Penn Oil Co. has completed in the Big Injun sand No. 88 on the O. D. Stockly farm, showing for a 20-bbl. pumper. In Union district, Clay County, the Hamilton Gas Co. has completed a test on the B. W. Mullenex farm making a 115,000 feet of gas. The location is 1,000 feet west of the company's J. A. Miller farm tests.

In Ravenwood district, Jackson County, the Heck Oil Co. has completed and shot a test on the John Hartley farm. It is a 2-bbl. pumper. The location is 1,460 feet southwest of the second test on the George Kuhl farm.

Marion and Monongalia Counties

In Clay district, Marion County, the Philadelphia Gas Co. has a gasser in the Fourth sand on the F. Lemley farm. In Battelle district, Monongalia County, the Pittsburgh & West Virginia Gas Co. has a gasser in the same formation on the M. M. Wilson farm.

In Geary district, Roane County, Godfrey L. Cabot has a salt sand gasser at a test on the Homer White farm. In DeKalb district, Gilmer County, the McCall & Co. test on the Riddle Brothers farm is a gasser in the salt sand. In Lee district, Calhoun County, the United Carbon Co. has a Big Injun sand gasser at a second test on the C. H. and J. J. Davis farm. In the same district, the Dunbar Oil & Gas Co. has a Big Injun sand gasser on the I. G. Flesher farm.

On Elk River, Big Sandy district, Kanawha County, 1,000 feet north of the United Fuel Gas Co.'s test on the Thompson heirs' farm, the same company has completed No. 19 on the Brown, Swan & Goshorn tract. It is a gasser in the Big Injun sand good for 500,000 feet.

Marshall County

In Liberty district, Marshall County, the Manufacturers Light & Heat Co.'s No. 3 on the F. L. and V. P. Reid farm is a gasser in the Big Injun sand. In the same district, the same company's No. 4 on the August Wendt farm is dry in all sands.

Wetzel County

In Church district, Wetzel County, D. W. Hull has a Gordon sand gasser on the W. G. Snodgrass farm. In the same district, the Manufacturers Light & Heat Co. has completed a test on the S. S. King farm, dry in all sands.

In Hackers Creek district, Lewis County, the Hope Natural Gas Co. completed a gasser in the Gordon sand on the I. M. Jackson farm. In Courthouse district, the Mid-Penn Oil Co.'s No. 5 on the J. P. Cole farm is a gasser in the Gordon sand.

Ritchie County Tests

In Grant district, Ritchie County, Robert Elder is moving tools to a location on the M. A. Starkey farm. In the same district, the Carnegie Natural Gas Co. has started to drill on the Lloyd Weaver farm. In the same district, the Mellon Oil Co. is due in the Big Injun sand on the Charles S. Lewis farm. In Clay district, Maxwell & Co. are due in the Maxon sand on the W. S. Haymond farm. In the same district, the Aetna Oil & Gas Co. has started to drill on the George Minard farm. In Union district, Wood County, the Economy Oil Co. has shut down on the Alexander Gribble farm.

Calhoun County

In Sherman district, Calhoun County, W. S. Daily, Son & Co. have a rig up on the A. F. Weaver farm. In Jefferson district, Pleasants County, Dinsmoor & Co. have cleaned out No. 4 on the Burley heirs farm, increasing its production from 4 to 6 bbls. a day. In Central district, Doddridge County, Frank Finley has completed a rig on the John Williamson farm. On the left fork of Triplet Creek, Spencer district, Roane County, the Hope Construction & Refining Co. has the rig completed for a second test on the Craig Bartlett farm. On Laurel Run of Paw Paw Creek, Paw Paw district, Marion County, Harry Tennant has started to drill on the E. Brewer farm.

PRODUCTION IN TURNER VALLEY FIELD MAKES A NEW HIGH RECORD

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Jan. 12.—Figures of production in the Turner Valley Field for December, 1928, show that production for that month reached a new peak. The month's deliveries of crude naphtha and light crude oil aggregated 47,505 bbls., compared with 39,709 bbls. in November. The highest previous monthly production, in August, 1928, amounted to 47,070 bbls.

Increased production in December was due to two factors, the coming into production of Okalta Oils' No. 1, whose individual output for the month amounted to 11,296 bbls., and the coming back into production of Dalhousie Oil Co.'s No. 1. On the other hand, McLeod Oil Co.'s deliveries in December declined more than 2,000 bbls. from the previous month, due to drilling and cleaning operations, and the freezing of the wells.

Deliveries to Imperial Oil, Ltd., in December aggregated 26,672 bbls. of crude naphtha and 19,000 bbls. of light crude. Regal Oil Refineries took 167 bbls. of crude naphtha and 1,666 bbls. of light crude. The crude naphtha production for the entire field thus amounted to 26,839 bbls., and the light crude to 20,666 bbls.

Detailed figures and averages for the various producing wells follow:

Imperial Oil, Crude Naphtha

Well—	Month's prod.	Dy.av.
Royalite's No. 4	15,564	502
Royalite's No. 7	2,434	78
Royalite's No. 8*	52	1
Dalhousie's No. 1*	5,887	189
Illinois-Alberta's No. 1	2,735	88

Imperial Oil, Light Crude

Royalite's No. 9	874	27
Royalite's No. 10	168	5
Royalite's No. 11	199	6
Royalite's No. 12	245	7
Dalhousie's No. 5	1,615	52
Dalhousie's No. 6	533	17
Foothills' No. 1	2,123	68
Foothills' No. 2*	420	13
Home Oil's No. 1	374	12
Home Oil's No. 2	1,180	38
Okalta Oils' No. 1	11,296	364

Regal Oil Refineries, Crude Naphtha

Vulcan Oils' No.1*	167	5

Regal Oil Refineries, Light Crude

Spooner Oils' No. 1	1,453	47
McLeod Oil Co.*	19	6
New McDougall-Segur*	194	6

Wells marked (*) were out of production part of the month, in most cases owing to freezing.

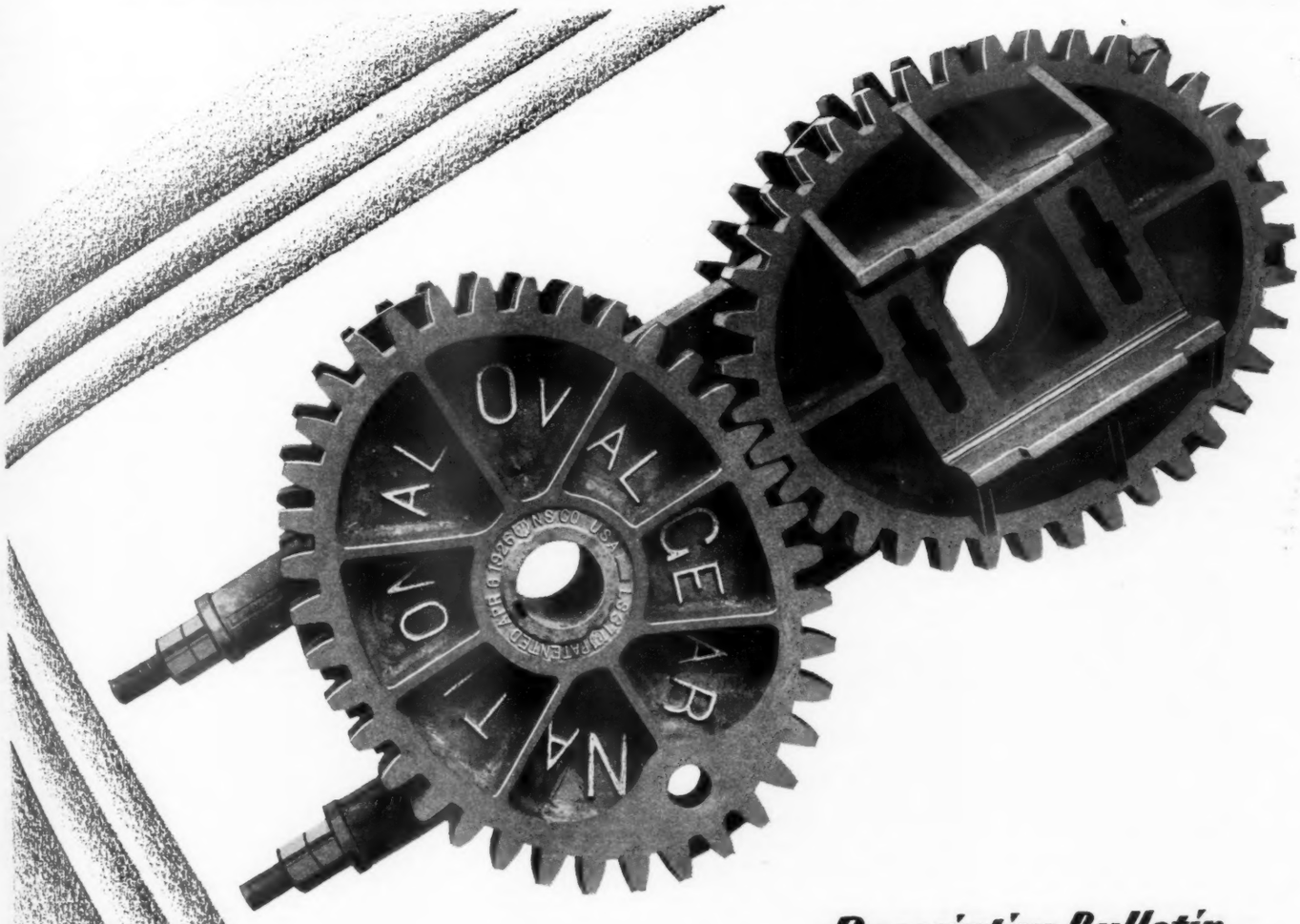
Alberta Production

These official figures bring the aggregate Alberta production for 1928 to 486,318 bbls., this including an estimate of the December production for the Wainwright Field. The 1928 total for the Turner Valley was made up of 374,795 bbls. of crude naphtha and 104,604 bbls. of light crude oil. Unofficial figures place the Wainwright heavy crude production for the year at 6,919 bbls., but this may be exceeded.

Dalhousie's No. 4, LSD 4, Section 18-20-2w5, which came back into production on December 7, is apparently increasing its flow, reaching an average of 225 bbls. over three weeks with a peak of 295 bbls. Though Dalhousie's No. 7 was located some time ago in LSD 10, Section 13-20-3w5, not far from No. 6 producer, drilling appears to be delayed pending the permanent organization of the Dalhousie Oil Co. The drilling operations so far carried on were handled by the Royalite Oil Co. in return for 51 per cent of the Dalhousie

(Continued on Page 106)

NATIONAL OVAL GEAR PUMPING ATTACHMENT



Descriptive Bulletin
No. 3NA
Free on Request

THE
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COMPANIES

Two Fair Producers in Allendale Pool

One Completion in Wabash County, Illinois, Field Good for 150 Bbls. and Another for 100 Bbls. Best in Months

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Jan. 12.—Little has been accomplished in the Central West fields outside of the Central Ohio division. The Lima Field of northwestern Ohio failed to report any completions. The weather conditions are blamed for the few wells reported on account of the heavy fall of rain, followed by snow, high winds and close around zero weather.

The only redeeming feature for the past several days was the completion of two nice producers in the Allendale Field, of Wabash County, Illinois. One of the wells produced 150 bbls. natural production in 24 hours and the other put 100 bbls. in tankage in the same length of time, and are the best wells found in the old field for several months. Many of the field men and laborers are afflicted with the "flu."

In the old Lima Field of northwestern Ohio there is nothing in sight to cause any activity, unless something new is soon opened up, the work will be confined mostly to the drilling on old abandoned leases. Last year the greatest activity prevailed in Liberty Township, Seneca County, near Bettsville and northwest of Tiffin, where some big wells were uncovered and in what is called the Murphy Pool. This pool is now pretty well defined although there are still numerous inside locations yet to drill, but the territory at its best has proved spotted and no well started is figured a producer until the drill reaches the sand, and then oil may be found near the top of the sand or down as deep as 400 feet in the Trenton Rock. There are only five wells under way in Seneca County at this time.

Central Ohio

The record of the Central Ohio fields for the past week show 18 completions, 5 producing wells with an initial production of 89 bbls., 5 dry holes and 8 gas wells. New work starting for the period are 18 new locations and 15 wells spudding or drilling, or a total in new work of 33, which is encouraging for the new year.

In Ashland County, Orange Township, the Kemrow Co.'s second test on the Emma Miller farm, Section 11, failed to find any sand and is called a dry hole. In the same township, the Logan Gas Co. is drilling No. 1-3,068 on the Charles N. Schooroy farm, Section 14, and the Ohio Fuel Gas Co. is drilling No. 1-3,410 on the Royal J. Welch, Section 1. In Perry Township, Robinson and others' No. 8 on the W. E. Strine, Section 20, after given a shot produced an initial of 25 bbls., but these wells usually drop to only small pumpers.

In Medina County, Medina Township, the Ohio Fuel Gas Co. is drilling No. 1-3,396 on the John Kenzig, Section 9. Same company made a location for No. 1-3,422 on the E. D. Flickinger, Lot 59, Westfield Township, same county.

In Lorain County, the Ohio Fuel Gas Co. has a gas well at No. 1-3,332, on the H. H. Osborne, Lot 25, Columbia Township. Same company made a location for No. 1-3,421 on the W. H. Tieltjies, Lot 19, Eaton Township.

In Wayne County, Congress Township, the Ohio Fuel Gas Co. hit a nice gas well in No. 1-3,046 on the Cordilla A. Fuhrman, Section 7. Same company is drilling No. 1-3,397 on the Michael Keyser, Section 5; also made a location on the William Swope, Section 7, and a location on the Earl Weaver, Section 7, Chester Township.

In Holmes County, Monroe Township, the Lydic Oil & Gas Co.'s No. 2 S. V. Allison farm, Lot 1, is a light gas producer. Same parties also drilled in two light gas wells in Nos. 4 and 5 on the M. G. Bird, Lot 8. The Allison well got its gas at 850 feet and the two Bird farm wells at 800 feet. In Richland Township, the East Ohio Gas Co.'s No. 1 L. M. Neal farm, Lot 15, is an average gas producer at 3,352 feet. The Ohio Fuel Gas Co. has an exceptionally good gas well in No. 1-3,329 on the David Kurtz, Section 33, Paint Township, and made a location for No. 1-3,424 on the John J. Harshberger farm, Section 6.

In Cuyahoga County, Olmstead Township, in the Cleveland Field, Hulse & Kundtz have started drilling their test on the Theodore Kundtz farm, Lot 64, Breck Township, some distance in advance of former developments.

No completions are reported from Knox County, although the Ohio Fuel Gas Co. started drilling at No. 4-3,408 on the Frank K. Koppart farm, Section 19, Brown Township, Knox County.

In Coshocton County, Clark Township, the Pure Oil Co.'s No. 1 on the W. H. Mohler farm, is reported good for 50 bbls. from a depth between 3,380 and 3,430 feet. The only change in Summitt County is a location made by the East Ohio Gas Co. on the G. Chenoweth farm, Section 4, Green Township, while the same company made a location on the George Hess farm, Section 6, Richfield Township, Summitt County.

In Licking County, Perry Township, near Jeromesville, the Whitehill Gas Co.'s No. 8 on the Albert Ashcraft farm, Section 2, produced 10 bbls. initially from a shallow sand found from 674 to 684 feet. H. C. Farmer's No. 5 on the Roy Baughman farm, Section 1, is a light gas well at from 689 to 714 feet, and is now drilling No. 3 on the Emmet Hoover, Section 3. Hulse & Kundtz drilled a dry hole in No. 6 on the Joseph Chaney farm, Section 1. Settles Oil Co. is drilling No. 5 on the Jacob Lethers farm, same area. In Fallsburg Township, the Preston Oil Co. is drilling a second test on the Wayland Ashcraft, Section 11. Same company made a location for No. 4 on the N. E. Morris farm, Section 10. Hulse & Kundtz set a stake for a second test on the G. W. Moran farm, Section 11, same township. Emerald Petroleum Co. made a location for No. 2 on the John E. Martin 10 acres, Section 10, also for a test on the Jacob Weiss farm, Section 8. Wittmer Properties Trustee is drilling No. 3 on the Lida Martin, Section 23, and made a location for No. 2 on the Sam Mossholder, Section 14. Ohio Fuel Gas Co. made a location for No. 1-3,371 on the Flora E. Fulk, Section 4, Hopewell Township.

In Muskingum Township, Muskingum County, the Pure Oil Co. made three new locations in Jackson Township, being No. 5 John Hoover, Section 5; No. 5 George Crawford farm, same section, and No. 2 on the Floyd Anderson farm, Section 4.

Three or four wells are in the Berea sand in Athens County, but not yet completed. The Ohio Fuel Gas Co. is drilling No. 2-3,375 on the John T. Fleming farm, Section 3, Ames Township. Kiggins and others are drilling a second test on another John T. Fleming farm, same section, and the Wiser Oil Co. is drilling on the Florence Porter, same section.

In Meigs County, Sutton Township, the Pure Oil Co.'s second test on the John Deer farm, Section 26, found the second Berea sand from 1,708 to 1,725 feet and went to a total depth of 1,736 feet, the well making a 3-bbl. pumper. Tyree and others made a location for No. 4 on the James Stobart farm, Section 17. In Salisbury Township, Sutton Brothers' test on the Moore-Williamson farm, Section 28, struck second Berea formation from 1,708 to 1,725 feet and went to a total depth of 1,736 feet, also getting a 3-bbl. producer. W. H. Snipe and others are drilling No. 1 on the Dallie A. Diehl farm, Section 23.

In Jackson County, Lick Township, the Ohio Fuel Gas Co. drilled a dry hole in No. 1-3,284 on the Jeff J. Buckley farm, Section 26, and drilled to a total depth of 2,584 feet. In this well the Clinton formation was found from 2,527 to 2,539 feet and the Medina stone at 2,579 feet. In Washington Township, the Ohio Fuel Gas Co. made a location for No. 2-3,323 on the Jane Cox farm, Section 11.

In Lawrence County, Mason Township, the Ohio Fuel Gas Co.'s No. 1-3,285 on the W. S. Bellville farm, Section 19, was dry at 3,559 feet. Same company made a location for No. 1-3,390 on the H. L. Hanley farm, Section 15, Symmes Township, same county.

In Guernsey County, Cambridge Township, the Ohio Fuel Gas Co. has a dry hole in No. 1-3,355 on the G. A. Dillon farm, Lot 4, at a total depth of 3,388 feet. Top of the Niagara lime in this well was found at 3,188 feet. Lime sand at from 3,322 to 3,337 feet.

In Morgan County, Marion Township, the Kemrow Co.'s No. 2 on the Ellsworth Mosier farm, Section 23, is an average gas well from the second Berea sand at from 1,540 to 1,568 feet, total depth 1,570 feet. Same company's No. 5 Hummell-Hoffman farm, Section 29, is also an average gas producer from the Berea at from 1,586 to 1,610 feet, total depth 1,618 feet. Ohio Fuel Gas Co. is drilling No. 1-3,402 on the Simon Remy farm, Section 29.

Indiana

Out of the five completions made in Indiana the best one was the Gem Oil Corp.'s second test, 250 feet from the north line and 1,260 feet from the east line of the S. M. and W. S. Ferris farm, in the southeast quarter of Section 5, Barton Township, Gibson County, with an initial production of 41 bbls. from a total depth of 1,352 feet, or 19 feet in the sand. No. 1 on this farm, completed a few weeks ago has been abandoned as its production was too light. In Washington Township, same county, William Bell and others' test on the E. and S. Ewing, in M. D. 82, produced 10 bbls. initially in a sand from 1,793 to 1,800 feet.

In Patoka Township, Pike County, the Bowman Oil Co.'s test, 250 feet from the north line and 650 feet from the west line of the A. McRellip farm, in the southeast quarter of Section 24, proved a light gas well around 50,000 feet. The gas was found in 7 feet of sand between the depths of 1,170 and 1,177 feet.

In the southern portion of the State,

(Continued on Page 102)

EXTENSION OF DEVELOPMENTS IN WESTERN KENTUCKY FIELD

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Jan. 14.—If talk of the oil operators at Owensboro and other towns over the field come true there will be a wide extension of developments over Daviess, Ohio and adjoining counties during the coming spring and summer. Preparations are in the making for bringing in more drilling outfits and a lot of wildcatting will be done in several of the near-by counties where during the past few months a great amount of lease work has been under way that will be explored for new pools. All of the old pools of 1928 have been tested out, with exception of the Burton Pool, in Daviess County and a few spots over Ohio and Hancock Counties. New pools will be sought to take up the new energy that is constantly pouring into this field. Several new rigs are already headed toward the Tri-County Field from eastern Kentucky, Oklahoma, Kansas, Louisiana and other points.

Eastern Kentucky

A few completions are reported from the eastern part of Kentucky. The most important test is being drilled by Dr. E. R. Maggard on the Sugar Loaf Hill, a short distance from Morehead, in Rowan County, which is estimated at 2,000,000 feet of gas. The flow of gas is heavy and other wells will be drilled immediately as the company headed by Doctor Maggard has obtained a franchise from Morehead, and it is reported that mains will be laid and gas piped to Morehead as soon as it is possible to do the work. The company has leased up a large block of acreage around the well. The well was being watched closely by both oil and gas operators and further leasing was done by the scouts for some of the large companies as soon as a showing was found.

Unknown parties are drilling a deep test on the head of Fish Trap Branch, 3 miles southeast of Whick Station in Breathitt County. The test, being on a direct line with the gas wells of Owsley County, makes the possibilities for gas look encouraging. The Petroleum Exploration Co. has secured acreage close to the test drilling in both Owsley and Breathitt Counties. The Petroleum Exploration has purchased the lease of Tom Bowman on which is located a producing gas well that was drilled by a New York concern several years ago, the lease being in the extreme southern edge of the Owsley County gas field. This company has recently drilled in a test on the Joe Tackett farm on Sturgen Creek, in Owsley County, which shows a small volume of gas. Same company drilled a dry hole on the Robert Cupp farm, on Little Goose Creek, about 6 miles west of Manchester, in Clay County, Kentucky.

Week's Work

A summary of the week's work in the Kentucky fields shows 21 completions, 8 producers with an initial production of 235 bbls., 11 dry holes and 2 gas wells.

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Ohio	7	5	203	2	0
Daviess	6	1	30	5	0
Allen	2	1	1	1	0
Warren	1	1	1	0	0
Lee-Owsley	1	0	0	0	1
Rowan	1	0	0	0	1
Clay	1	0	0	1	0
Hardin	1	0	0	1	0
Hancock	1	0	0	1	0
Total	21	8	235	11	2

Western Kentucky Wells

In Ohio County, in the eastern edge of the Ambrose Pool, James C. Ellis drilled in No. 7 on the Mary Cundiff and No. 11 on the B. L. Gossett farms at 50 bbls.

(Continued on Page 102)

The Amarillo-Denver Line

The Amarillo-Denver Line—a 22″ and 20″ gas pipe extending for 340 miles between Amarillo, Texas, and Denver, Colorado—is but one of the world's large lines which has assured its future by the extensive use of BITUMASTIC ENAMEL. There will, of course, be many years before the value of the coating on this line can be fully demonstrated. The engineers, however, can look ahead because they can look back on more than forty years of past experience. For a detailed history of this performance write for our book—"The Protection of Pipe Lines." Ask also for Bulletin 205 "Directions for Application" or for our service engineers whose supervision in the coating of transmission lines, distribution mains and service pipe are now available at a very nominal charge.

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go **Houston** **San Francisco**

EQUIPMENT AND SUPPLIES

J. M. WILSON IS MADE BELTING SALES HEAD

J. M. Wilson, formerly assistant manager of the Atlanta, Ga., branch office of the Russell Manufacturing Co., Middletown, Conn., has been appointed belting sales manager of the replacements

J. M. Wilson

department, with headquarters in Middletown. Following his service in Atlanta, Mr. Wilson was active in sales management for the company in New York prior to promotion to his new post. About 1,500 men and women are employed in the Middletown plant of the company.

DEVICE SPEEDS OFFICE WORK

Two of the most important accessories in the modern oil company office are the telephone and the typewriter. The telephone typewriter combines the principal features of both. The machine itself is similar to the ordinary typewriter and can be operated by any typist. It prints either on a page of standard size or on a narrow tape, and has a high speed capacity of approximately 60 words a minute. The Bell system now provides telephone typewriter service for commercial and industrial organizations of all kinds. One of the most important features of the telephone typewriter is the swifter service which the user, through close contact between plant, headquarters and branch office, is apt to give his customers.

TO HANDLE EMSCO PRODUCTS

Arrangements to distribute Emsco products through the Continental Supply Co. have been made, according to Charles D. Wagner, vice president and sales manager of the Emsco Derrick & Equipment Co., following a tour of the Eastern and Mid-Continent territory. This announcement, according to Mr. Wagner, disposes of the rumor that the Youngstown Sheet & Tube Co., of which the Continental Supply Co. is a subsidiary, were negotiating for acquisition of the Emsco company.

The Emsco Derrick & Equipment Co., which manufactures oil field equipment, has plants in Los Angeles, Calif.; Houston and Dallas, Tex., and London, England.

NEW BOOK ON TRACTOR TOOLS

Tools now are being built for tractors and tractor manufacturers sell tractors to fit certain sizes of different tools. A book in this new tractor selling is being distributed by the Caterpillar Tractor Co., San Leandro, Calif., and Peoria, Ill., to "Caterpillar" salesmen and dealers throughout the world.

DIESEL-ELECTRIC TANKER

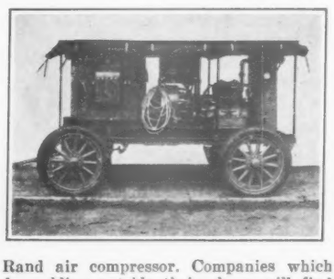
A new coastwise, Diesel-electric tanker under construction for the Tide Water Oil Co. will carry gasoline and lubricating oil. Her capacity will be approximately 20,000 bbls. of gasoline and 55,000 gallons of lubricating oil, the latter to be carried in individual tanks in the forward hold space. Her route will be between the limits of Portland, Me., and Hampton Roads, Va. She will carry a crew of 18 men.

The power plant will consist of two 6-cylinder, nonreversible, heavy duty, solid injection oil engines rated 625 shaft horsepower at 225 revolutions per minute. These will be direct connected to two direct-current generators each rated 410 kilowatts, 225 revolutions per minute, 250 volts, shunt wound. The generators and other electric equipment will be furnished by the General Electric Co.

In addition to the two main generators there will also be three auxiliary generators, each rated 45 kilowatts, 240 volts, compound wound.

WILSON ADDS TO ITS WELDING EQUIPMENT

Wilson Welder & Metals Co., Inc., of Hoboken, N. J., announces addition of a new machine to its line of special electric welding equipment. It is a gasoline engine-driven welder with an Ingersoll-



Rand air compressor. Companies which do welding outside their shops will find this welder, with its facilities for operating riveting and chipping machines and grinders a convenience, according to the manufacturers.

SHEFFIELD PROMOTES TWO

J. J. Hasburgh, who has been appointed manager of sales in the reinforcing division of the Sheffield Steel Corp., Kansas City, Mo., has been with the company nine years and has formed a wide acquaintanceship throughout the Middle West in the reinforcing industry.

Lester G. Schraub, who has just been appointed manager of sales in the wire division, came from the Keystone Wire & Nail Co. of Peoria, Ill., with which he was connected 17 years, for the last several years as assistant sales manager.

BUSINESS NOTES

The Drane Tank Co. of Tulsa has established Kansas headquarters in Wichita with Phil Drane in charge.

Robert M. Gates, manager of the industrial department of the Superheater Co., New York, has been elected vice president of that company.

Following the merging of American Schaeffer & Budenberg Corp., Brooklyn, N. Y., with Consolidated Ashcroft Hancock Co., Inc., announcement is made that all communications for the first-named concern should be addressed to Consolidated Ashcroft Hancock Co., Inc., 100 East Forty-second Street, New York.

WEED IN CHARGE OF SALES

E. G. Weed, for the past six years president and general manager of the Pyrene Manufacturing Co. of Canada, Ltd., has joined the Pyrene Manufacturing Co. as vice president in charge of sales and advertising. For more than 20 years Mr. Weed was connected with the American Ever-Ready Works and the National Carbon Co. In the years immediately prior to joining Pyrene of Canada, he served as western manager in charge of the National Carbon Co.'s Chicago offices.

TWO ARE TAKEN BY DEATH

Charles A. Daniel, president of the Quaker City Rubber Co., Philadelphia, died Monday, December 24, 1928.

Eugene Kibele, president of the Kibele Manufacturing Co., San Antonio, Tex., died suddenly Friday, December 28, 1928.

VAUGHN SALES MANAGER OF DISC BIT DIVISION

Leonard E. Vaughn has been appointed sales manager of the disc bit division of the Byron Jackson Pump Co., according to Robert Schurman, vice president. Harry M. Taylor was named Mr. Vaughn's chief assistant. The promo-

Leonard E. Vaughn

tion of Mr. Vaughn follows the recent merger of Wilson Oil Tools Corp. for which he was manager of field sales, with the Byron Jackson interests. Mr. Taylor was connected with the United States Tool Co. before that concern's merger with Byron Jackson.

WELDED PIPE JOINTS TESTED

The current number of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York, contains an interesting article on the results of an extensive study of full-size welded pipe joints made by the Linde company and the National Tube Co. A 600-ton testing machine in the latter company's laboratory in McKeesport, Pa., capable of gripping full-size sections up to 18 inches outside diameter and pullling them to destruction, was used. Types of joints tested were:

1. Forty-five degrees single-vee, butt-welded joint.
2. Normal socket bell and spigot joint.
3. Socket joint with groove.
4. Socket joint with welded rivets or pins.

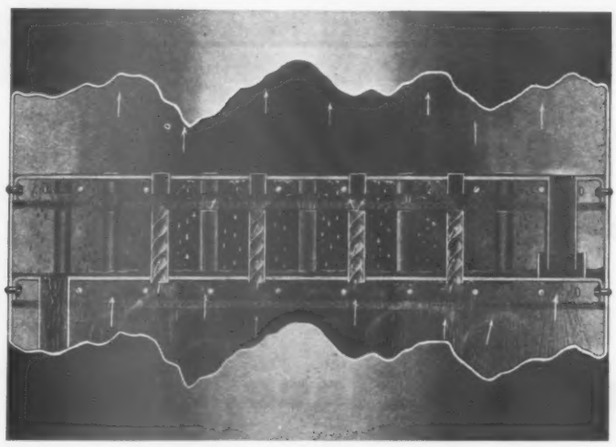
All welding was conducted according to procedure control methods, and Oxweld No. 1 high test rod was used.

NOW GENERAL SALES MANAGER

The Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., fabricator of elevated steel water tanks, oil tanks, plate work and active in the construction of waterworks, highway bridges and municipal incineration, announces changes in its organization.

J. E. O'Leary, in charge of sales at the New York office, since its opening in 1914, has been promoted to general sales manager of the company, and will assume his new duties at the home office in Pittsburgh, about February 1. H. W. Ford succeeds Mr. O'Leary as manager of the New York office. G. A. Smith will direct the construction and erection activities of the company. W. E. R. Moore, formerly with the American Locomotive Co., has been engaged as export manager.

REMOVES LIQUIDS PARTICLES FROM CIRCULATING GAS



The Tulsa type mist extractor is a recent development in gasoline plant equipment. Removal of liquid particles from suspension in circulating gas without undue pressure drop has long been a problem. Tulsa type mist extractors are designed to fill this need. Every bit of gas which passes through them is said to be scrubbed dry with only an infinitesimal pressure drop. Tulsa type mist extractors are made by the Tulsa Boiler & Machinery Co., Tulsa.

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PARKERSBURG MISCELLANEOUS DRILLING EQUIPMENT

LISTED in the lower right hand corner of this page, and illustrated at the left, are catalogs published by The Parkersburg Rig & Reel Company.

In them you will find complete information, description and illustrations of Parkersburg Equipment.

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- Steel Wheels
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- Miscellaneous Drilling Equipment

Check the equipment in which you are interested, sign and return this page, with your name and address, to us and we will send you complete information on the items checked.

The PARKERSBURG RIG & REEL COMPANY

Executive Offices & Main Plant, Parkersburg, W. Va., U. S. A.

Sales Offices Maintained and Stocks Carried in Every Producing Field

MEN KNOWN IN OILDOM

Clarence E. Olmsted

Clarence E. Olmsted, who has just been made executive vice president and general manager of The Texas Company of California, is 38 years of age and a graduate of Columbia and Stanford Universities, where he was awarded degrees in engineering. Mr. Olmsted, who succeeds Jacques Vinmont, was vice president and director in charge of The Texas Company's producing department in California at the time of his promotion. He entered the oil industry in 1919 in the engineering department of The Texas Company in New York and held successive positions in the refining and terminal departments.

In 1924 Mr. Olmsted went to California as head of the transportation and natural gas departments of the California Petroleum Corporation and later assumed charge of the refining, marine, personnel and other departments of that company. His executive ability was recognized quickly by the directors of the California Petroleum Corporation and in a short time he was elected vice president, which position he occupied when that company was merged with The Texas Company. In addition to directing the destinies of The Texas Company in Arizona, Washington, Oregon, California and Nevada, Mr. Olmsted is a vice president of the California Chamber of Mines and Oil.

PERSONAL PARAGRAPHS

H. W. Bell, of the Pure Oil Company, Chicago, was a visitor to Tulsa during the week.

* * *

George L. Cabot, Jr., of Boston, Mass., an authority on carbon black, was in Tulsa during the week.

* * *

E. DeGolyer, president of the Amerada Petroleum Corporation, was in Tulsa during the past week.

* * *

Mr. and Mrs. George Locke are sailing January 26 from New York for a six weeks' trip through Europe.

* * *

O. H. Carlisle, assistant manager of sales of the Gulf Refining Company, Houston, Tex., spent several days in Dallas the past week.

* * *

S. P. Tschappat, general manager of the Hercules Tool Company, Tulsa, has returned from a several weeks' trip to the Eastern fields and while East spent Christmas with his mother in Barnesville, Ohio.

K. C. Sclater, consulting petroleum engineer of Ponca City, Okla., was in Tulsa during the week in connection with his consulting practice.

* * *

Dr. T. B. Williams, consulting geologist of Calgary, Alberta, recently visited his brother, Dr. M. Y. Williams at Vancouver, British Columbia.

* * *

E. C. Noble, of Tulsa, sales manager for the Webber Engine Company of Kansas City, Mo., called on the trade in Kansas the past week.

* * *

William M. Grant, secretary, and J. C. Blake, general sales manager of Stoody Company, Whittier, Calif., were in Tulsa early in the week.

* * *

T. N. Milling, general counsel for the Standard Oil Company of Louisiana, was a visitor in Tulsa last week, and has returned to Shreveport, La.

* * *

R. W. Walters, sales manager of the Bridgeport Machine Company, Wichita, Kans., has returned from a two weeks' trip to Sandoval, Ill., where he visited his parents.

* * *

Alexander Duckham, chairman of Alexander Duckham & Company, Ltd., and Trinidad Central Oilfields, Ltd., has left on a visit to the companies' oil fields in Trinidad.

* * *

L. C. McEvoy, oil producer of St. Louis, Mo., who is an executive of the St. Louis American League Baseball Club, was a visitor this week at Tulsa, his former home.

* * *

William R. Capron, of the Sinclair Crude Oil Purchasing Company, Tulsa, is the proud father of a boy born January 5. The future oil man has been named John Ellis Capron.

* * *

Leo Gilbert, scout for the Mexican Gulf Oil Corporation, Tampico, Mexico, has been transferred to Houston, Tex., to act in the same capacity for the Gulf Production Company.

* * *

F. P. Rushmore, in charge of Rocky Mountain operations for the Gypsy Oil Company, is spending a few days in Tulsa, and will leave for his home in Denver, Colo., this week.

* * *

R. Ogarrio, recently elected vice president in charge of production of The Texas Company, and R. F. Baker, chief geologist of The Texas Company, were recent visitors to Tulsa.

* * *

J. R. Turnbull has resigned as chief scout for the Gulf Production Company, Houston, Tex., and is to make his residence in New Mexico where he has been the past year on a leave of absence.

* * *

H. H. Fair, of the International Petroleum Company staff at Talara, Peru, is spending a few months with his family at Arkona, Ontario. He will return to Peru with Mrs. Fair and two children in March.

* * *

Adolphe Schwarz, chief electrical engineer from the Russian State Electrical Trust, Leningrad, was in Tulsa on January 11 incident to the studies of the use of electrical equipment in the American petroleum industry.

* * *

A. T. Towl, vice president, of New York City, E. W. Macklin, general superintendent, of Parkersburg, W. Va., and V. S. Swisher, secretary, attended a dividend meeting of the Eureka Pipe Line Company in Pittsburgh, Pa.

* * *

Kenneth Hartman, for two years chief scout of the Phillips Petroleum Company in West Texas with headquarters at San Angelo, Tex., has resigned to become head of the land department of the Amerada Petroleum Corporation in New Mexico. He has moved his family to Roswell.

* * *

Herbert L. Eggleston, for several years manager of the natural gasoline department of the Pan American Western Petroleum Company, has severed his connection with that concern to become manager of refinery and gas operations of the Gilmore Oil Company. He will have direct charge of the Gilmore company's recently enlarged refinery at Vernon and the Gilmore-Dabney natural gasoline plants at Long Beach.

H. R. Gruber, manager of the Mid-Continent and Eastern sales for the Union Wire Rope Corporation, Tulsa, visited the Wichita, Kans., Field, the past week.

* * *

W. E. Lockhart has resigned from the firm of Frank E. Kistler & Company, with headquarters in Denver, Colo., to assume the presidency of the Inland Gas Corporation, with headquarters at Ashland, Ky., effective January 1.

* * *

Van H. Manning, director of research for the Petroleum Research Corporation, New York City, has been appointed consulting petroleum engineer for the Republic of Cuba. Mr. Manning left for Havana, Cuba, the first of the year.

* * *

Capt. D. Comins, late Royal Engineers, who is a petroleum engineer associated with Sir John Cadman of the Anglo-Persian Oil Company, has been spending several days in Tulsa and is now visiting the Mid-Continent fields in this vicinity.

* * *

W. P. Sutton, formerly district superintendent of the Indian Territory Illuminating Oil Company in the Greater Seminole district of Oklahoma, has been moved to Oklahoma City and will direct the operations of that region for the company.

* * *

W. B. Pyron, who has been vice president of the Gulf Production Company at Houston, Tex., and who recently was transferred to California to manage the company's holdings there, left Houston the past week to assume his new duties.

* * *

H. K. V. Tompkins, formerly general agent for the Mexican Gulf Oil Corporation at Tampico, Mexico, has arrived in Houston, Tex., and assumed his new duties in the executive department of the Gulf Production Company as assistant to the vice president.

* * *

Robert D. Hawley, formerly general attorney for the Union Oil Company of California in the Rocky Mountain area, has been appointed general counsel for the Continental Oil Company with headquarters at Denver, Colo. He succeeds James G. Stanley, who resigned to become vice president and general counsel of Lindsley & Company, investment bankers of New York.

* * *

D. W. Moffitt, vice president of the Mid-Continent Petroleum Corporation, Tulsa, is rapidly recovering from illness contracted during the meeting of the American Petroleum Institute at Chicago early in December. Mr. Moffitt at present is at his home in Tulsa. He expects to take a vacation trip to southern points before returning to his offices some time in February.

* * *

V. H. Sanders, Jr., utility clerk in the St. Joseph, Mo., division of the Standard Oil Company of Indiana, has been made head of the tax, real estate and accident department, succeeding A. L. Steinhauser, transferred to the tax department at Chicago. Virgil T. Stout, of the credit department, same division, has been made assistant to the manager of the Quincy, Ill., division.

* * *

C. A. Kramer, for several years general manager of the Columbian Steel Tank Company, has been made vice president of the company, it was announced this week. E. E. Wild, manager for a number of years, becomes general manager. Mr. Wild has had direct charge of export trade and is an authority on this subject. J. F. Carter, formerly assistant manager, becomes assistant general manager in the new regime. F. C. Buchanan was made director of sales, national accounts division. He will give considerable time to promoting standardization of oil equipment.

* * *

E. T. Johnson, of Bradford, Pa., has retired from the oil business at the age of 89 years. He recently sold his last remaining oil property, the Holding Oil Company, consisting of 265 acres containing 31 producing wells, near Kanesholm, Pa. A few years ago Mr. Johnson sold all his interest in the Test Oil Company, operating in Oklahoma. He has been in the oil business since 1865, entering the oil country immediately after having been mustered out of the Federal army, and had been an active producer of oil for over half a century.

Natural Gas Developments

Utilities Commission Grants Certificate For Utah Gas Line

DENVER, Colo., Jan. 12.—With the granting of a certificate of convenience and necessity by the Public Utilities Commission of Utah, the last obstacle in the way of beginning actual construction on the projected natural gas line from the Baxter Basin and Hiawatha Domes in Wyoming and Colorado to central Utah and Southern Idaho has been removed.

An order has been placed for the pipe. Franchise difficulties have been ironed out, the various construction and operating units are being organized, and construction from Salt Lake City eastward is expected to begin shortly and from Baxter Basin westward as early in the spring as weather conditions will permit. The cost of the project is estimated at $20,000,000.

The construction of this line has been under consideration for several years by several interests, but opposition from various sources affected held up the project until last summer when John McFadyen, vice president of the Ohio Oil Co., and L. B. Denning, president of the Lone Star Gas Co., filed application with the commissioners of Salt Lake City for a franchise to distribute natural gas for domestic and industrial purposes in that city. Similar action was taken in reference to Ogden. These men represented the Ohio Oil Co., the Prairie Oil & Gas Co., the Producers & Refiners Corp., George W. Crawford, of Pittsburgh, Pa., Fred W. Crawford, of Columbus, Ohio, and T. B. Gregory, of Pittsburgh, Pa. Previous to that time it is understood a deal could not be made with the local distributors of manufactured gas in those cities for the distribution of natural gas and the granting of a franchise to the natural gas interests indicated there would be competition in the field. A few weeks ago the Western Public Service Co., which had been organized by the new interests, acquired the common stock of the Utah Gas & Coke Co. and the Ogden Gas Co. from the American Public Utilities Co. (Insull interests) thereby rounding out the plans.

Last November the Western Public Service Corp. was organized as the holding company for the various units connected with the enterprise, with a capital of 2,000,000 shares of no-par value. The officers of this company are: Chairman of the board, George W. Crawford, of Pittsburgh, Pa., also chairman of the board of the Columbia Gas & Electric Corp.; president, O. D. Donnell, president of the Ohio Oil Co.; vice presidents, N. K. Moody, president of the Prairie Oil & Gas Co., L. B. Denning, president of the Lone Star gas Co., R. J. Berry, vice president of the Ohio Oil Co., T. B. Gregory, vice president of the Columbia Gas & Electric Corp.; treasurer, T. B. Gregory; secretary, D. E. Mitchell; assistant secretary and assistant treasurer, E. B. Redpath and F. B. Firman. Directors are: O. D. Donnell, R. J. Berry, M. N. Poe, L. Fitzpatrick, all of the Ohio Oil Co.; N. K. Moody, W. S. Fitzpatrick, John Fertig, L. R. Crawford, all of the Prairie Oil & Gas Co.; G. W. Crawford, T. B. Gregory, F. W. Crawford and L. B. Denning, representing the Crawford group.

There will be several subsidiary units formed to handle the production, transportation and marketing ends of the business. For the present the Ohio Oil Co. will have charge of the production, the Prairie Oil & Gas Co. the transportation, and the Columbia Gas & Electric Corp. the distribution. The construction unit will be the Uinta Pipe Line Co. with the following officers, all officers of the Producers & Refiners Corp.; John Fertig, president; E. C. Wagner, vice president; O. O. Holgren, treasurer; W. E. Bryan, assistant treasurer; and George Baird, secretary. Additional directors are W. A. Miller, of the Illinois Pipe Line Co., and T. B. Gregory and H. J. Crawford, of the Columbia Gas & Electric Corp. This company is opening offices in Salt Lake City with E. C. Wagner in charge.

The entire system will comprise approximately 350 miles of pipe line, and in addition to the towns named, Helper, Price, Logan and other towns and industries in central Utah will be supplied.

NEW GAS LEGISLATION PREPARED IN MICHIGAN

MUSKEGON, Mich., Jan. 12.—All persons or corporations producing and transmitting, or purchasing and transmitting natural gas within the State of Michigan will become common purchasers and carriers of gas and will fall under the jurisdiction of the Michigan Public Utilities Commission if a proposed new gas law is adopted at Lansing at the present session of the legislature.

Pro rata purchase and use of the available gas supply of the Muskegon or any other field is one of the principal objects of the proposed bill.

All common purchasers of natural gas, whether producing or receiving gas from producers, are prohibited from taking more than 25 per cent of the daily natural flow of any gas well or wells. When the full production is in excess of the market demands, any common purchaser shall take only such proportion of the available supply as may be marketed and utilized without waste as the natural flow of the well or wells bears to the total natural flow or production of such common source or field.

Contracts for the purchase of nearly 2,000,000 feet a day of natural gas have been signed with the Industrial Gas Co. of Michigan by industries and the municipal electric light plant at Grand Haven, practically assuring the laying of a 6-inch line between the Muskegon Field and the nearby city, a distance of about 12 miles.

About 6,000,000 feet of gas a day is now being pulled out of the Muskegon Field by the four pipe lines. About 3,000,000 feet is being used by the Continental Motors Corp., another 1,000,000 feet by the customers of the West Michigan Consumers Co., another 1,000,000 feet by the Muskegon Traction & Lighting Co., the local gas company, and still another 1,000,000 feet by the Central Paper Co., served by the Muskegon Pipe Line Co. Consumption of the Muskegon Pipe Line Co. is expected to be between 5,000,000 and 10,000,000 feet a day within a short time, and the same by the West Michigan Consumers Co. The Traction company probably will need 1,500,000 feet.

ROYALITE SCRUBBING PLANT

The Royalite scrubbing plant, extracting sulphur from the wet gas in the Turner Valley Field, is the largest of its kind in the world. The field itself has 32 producers, 26 wells drilling and 17 shut down. The scrubbed gas is delivered under its own pressure to Calgary. An elaborate system of pipe lines has been built to collect gas, gasoline and crude oil, and to distribute water through the Turner Valley Field. Of steel pipe of varying sizes there are 30 miles for gathering gas, 60 miles carrying fuel gas to plants and drilling rigs, 12 miles gathering crude oil, 15 miles gathering crude naphtha, and 35 miles distributing water. Constant additions are being made to these systems, as the field extends.

Compared with coal gas testing 755 B.t.u., the Turner Valley gas, after the naphtha is extracted, shows a B.t.u. content of 1,155.

CALIFORNIA OPERATORS ARE CONSERVING GAS

SACRAMENTO, Calif. Jan. 12.—Oil field operators are swinging into line to help the state conserve its natural gas, Fred G. Stevenot, director of the Department of Natural Resources, declared.

Stevenot said that about 60 per cent of the operators in the Long Beach Field and 40 per cent in the Santa Fe Field have indicated their willingness to cooperate.

The director reported that during the past month gas held in the ground amounted to 146,782,000 feet daily, and that the total gas production was 918,199,000 feet daily; gas used in the field, 350,346,000 feet daily; sold to consumers, 310,971,000 feet daily; total not used and injected back into the ground, 11,433,000 feet daily; lost through new wells blowing off, principally, 217,300,000 feet daily.

BROOKLYN UNION CO. AND KOPPERS CONTRACT

NEW YORK, Jan. 12.—The Brooklyn Union Gas Co. has entered into a contract with The Koppers Co. of Pittsburgh, Pa., whereby its new coke oven plant, now under construction at its Greenpoint works, will be operated by the Pittsburgh interests, according to announcement by James H. Jourdan, president of the gas company. A total of $18,000,000 is invested in the coke oven plant, and the contract for its acquisition by the Koppers interests has been submitted to the New York State Public Service Commission.

Under the terms of the contract, Brooklyn Union Gas Co. will purchase from The Koppers Co., upon completion of the plant, 20,000,000 feet of gas daily, with additional quantities taken as the project develops.

In announcing the deal, Mr. Jourdan said: "The Koppers Co. owns and operates a large number of coke oven plants in the United States, either directly or through subsidiary companies. The Seaboard By-Products Co. in New Jersey is a Koppers enterprise. At the Seaboard plant, coke oven gas is made and sold to the Public Service Electric & Gas Co. of New Jersey. Coke, which is a by-product in the manufacture of gas, is sold at wholesale and retail throughout Greater New York and eastern New Jersey."

VALUATION DECISION

WASHINGTON, D. C., Jan. 12.—The United States Supreme Court decided an important valuation question in a West Virginia gas rate case.

The court upheld a "book" valuation of approximately $7,000,000 for the underground gas reserves of the United Fuel Gas Co., instead of the valuation for rate-making purposes of more than $36,000,000 claimed by the company. The West Virginia and Kentucky Public Utilities commissions refused to increase rates, and the federal courts now have finally decided that the company cannot collect a "return" on the hypothetical future value of its stored natural resources.

AMERICAN FUEL & POWER

Organization of the American Fuel & Power Corp., as a holding company to acquire a controlling stock interest in the Inland Gas Corp and Kentucky Fuel Gas Corp., is announced. The new unit has been formed with the purpose of unifying the management properteis, which will both continue under the supervision of the Hope Engineering Co. Officers of the corporation are: H. C. Zwetsch, chairman of the board; W. E. Lockhart, president; A. H. Grayburn, vice president and treasurer; and D. W. Collins, secretary.

Abandon Kane Test At 7,925 Feet After Three Years of Work

OIL CITY, Pa., Jan. 12.—Wedged in the 8-inch hole, nearly 1½ miles in the earth, a fallen piece of 8¼-inch casing—not more than a few inches long—has terminated operations at the United Natural Gas Co.'s deep test well near Kane, Pa.

The well, which was spudded in on September 21, 1925, was shut down last September 24, to await the arrival of a new 10,000-foot drilling cable. At this time the tools had penetrated to 7,925 feet—5 feet more than 1½ miles—making it the fourth deepest well in the world.

When the drillers attempted to run in the tools to reopen operations about the middle of November, they discovered the casing had buckled at a depth of about 5,800 feet. This kink was carefully swedged out and the hole, apparently, cleared. However, a small piece of the casing had been knocked loose in straightening out the hole, and had dropped, wedging tightly about 200 feet from the bottom.

The tools were run in again and safely passed the "trap" made by the bit of casing, but could not be pulled back past it when the jars locked. Efforts to clear the hole continued until the cable snapped off about 500 feet from the surface.

Although the field men are confident they could clear out the hole, J. G. Montgomery, Jr., superintendent of fields and chief geologist of the company, stated the cost would be too great for the results which might be expected by drilling further. The job of "pulling" some 75 tons of casing out of the abandoned hole is now underway.

The well was started to test the Medina sand, which is productive at shallower depths in New York State. This purpose was accomplished when the drillers penetrated the sand at about 7,200 feet, where only slight traces of gas were found.

After their objective had been reached and as long as they were experiencing no great difficulty in drilling, company officials decided to keep going indefinitely, as operators were brining to light valuable geological data.

More than $100,000 was expended in sinking the well. The comprehensive chart of each formation penetrated and the thousands of samples kept by geologists is considered invaluable.

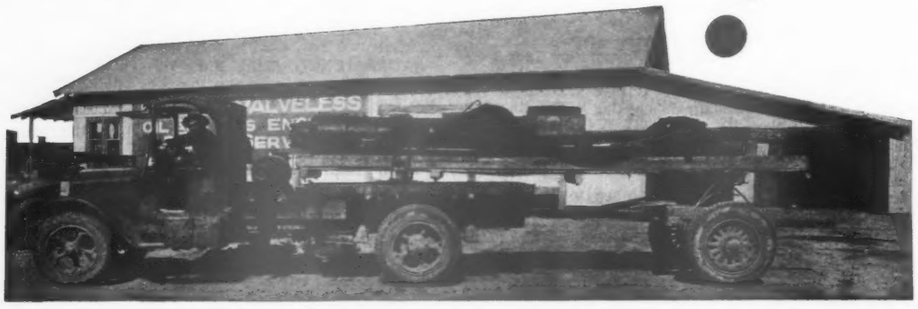
Twenty high-pressure gas pockets were encountered in the Marcellus shale and Onondaga limestone, from 5 to 75 feet apart, which blew the tools sometimes as high as 200 feet in the hole. Some of these blows were exhausted in five minutes. The longest continued for two hours. The well is now producing 20,000 feet of gas daily from the Kane sand.

The Kane test is the deepest in the eastern part of the country. It also contains the longest string of 8¼-inch casing—6,604 feet. Operations established another record when an open, 10-inch hole was carried to a record depth of 6,227 feet.

NEW MONTANA GAS LINE

A new gas line is scheduled for construction in Montana during 1929. The Montana Dakota Power Co., which has developed a good gas production in the Cabin Creek district and operates several gas lines in Montana and South Dakota, will lay a line to serve 26 communities along the Great Northern Railroad. The line will be approximately 200 miles long, and new wells will be drilled in the Cabin Creek and Kremlin districts to supply the gas.

All Aboard!



The Entire Franklin Engine is Easily Moved on one Truck Load—

One truck—that's all. And no overloading or straining of the truck.

The Franklin Engines are not bulky. Good material and scientific design give the Franklin Engine greater strength without useless weightiness.

And loading the Franklin is as quick and efficient as a military movement. The few parts necessary to remove for loading, come off easily, and are quickly assembled after unloading.

Yet, the best part of the Franklin is that you've got something when you get it set up. The simplicity of the mechanism, and the small quantity of fuel and water needed, join to make the Franklin Engines the best buy for power.

FRANKLIN VALVELESS ENGINE COMPANY
Franklin, Pa.

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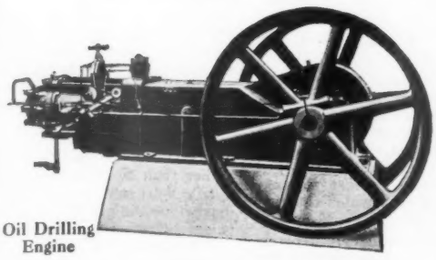
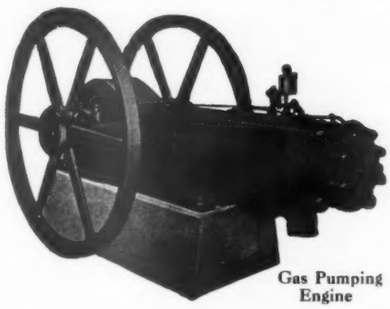
OIL AND GAS ENGINES

The FRANKLIN Engines



Oil Drilling Engine

New type of oil drilling engine for western and mid-continent service. An engine combining ample power, simplicity, quick starting, low fuel and lubricating cost.

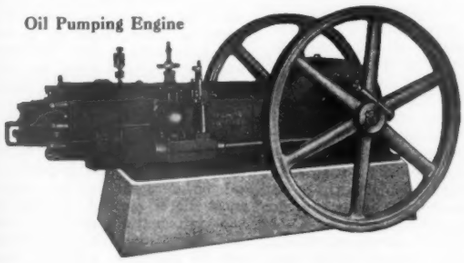


Gas Pumping Engine

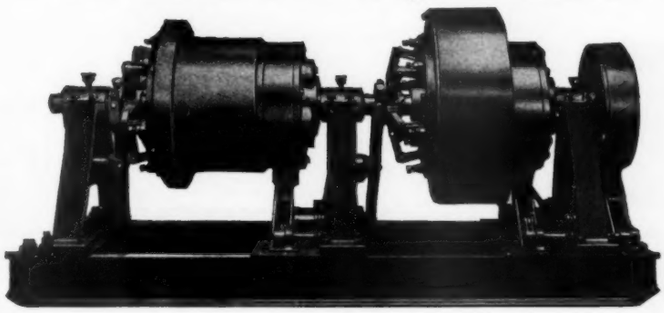
Franklin gas pumping engines are light, economical and powerful. They are interchangeable on the same block as gas drilling engines.

After you have finished drilling, move in one of these Franklin Pumping Engines. These pumpers come in 30, 40, 50 and 75 horsepower.

Oil Pumping Engine

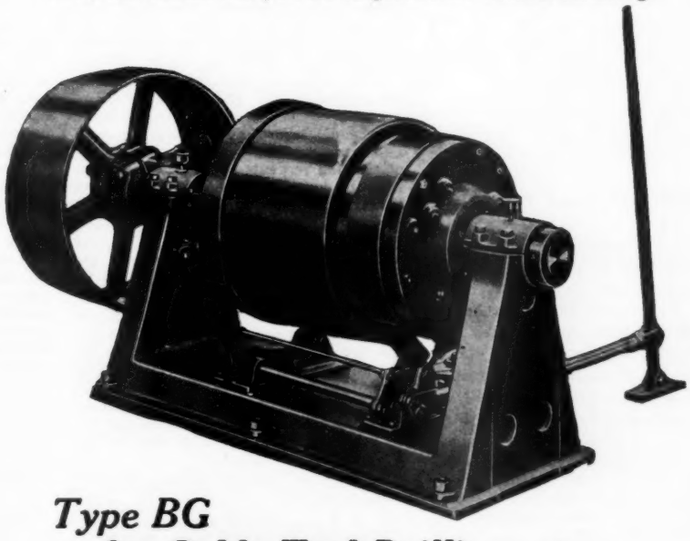


Many Features Put FRANKLIN'S NEW LINE far Ahead of Old Style Clutches



Features of the 2 SD Drilling Clutch

Two speeds in either forward or reverse—all bearings enclosed—run in oil or grease.
All brake band and clutch discs adjusted without stopping the engine.
All brackets, bell cranks, toggle arms, brake cranks, levers, driving discs, spiders and sliding sleeves made of steel.
All similar parts of clutch interchangeable.
Belt driven—no shaft breakage.
The 2 SD Clutch will pull the largest bailer without faltering.



Type BG for Cable Tool Drilling, etc.

Here is a clutch that will operate satisfactorily and smoothly for cable tool drilling or for pumping operation. The BG Type has one speed forward and reverse. It is much the same construction as the 2 SD clutch.

FRANKLIN VALVELESS ENGINE COMPANY

Franklin, Pa.

PLY COMPANY
Oil Fields

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

HOW ONE MAN BEAT EMULSION

The question concerning emulsion trouble submitted by E. S. F., and printed in this department December 27, 1928, with an answer, has brought a helpful letter from a Seminole oil man. The communication sent by E. S. F. said in part: "I have 11 wells on my property. All of them are small producers. I am getting this mixture of water and oil in five of them. I do not feel as though I could go to any great expense in getting the water out of this mixture as my profit from my production is too small." Discussing the problem presented here the Seminole man says:

"I have read with interest the problem of E. S. F. as stated in your department in the December 27 issue of The Oil and Gas Journal. I can appreciate his position. He has a small production, probably from an old lease from which everything unnecessary to the actual pumping of the wells has been removed, and he has cut oil to handle and no boilers, casing or perhaps extra tanks to handle it with. I was once faced with the same problem.

"I had one of those pumping jobs where the pumper is the whole working force and the boss comes around about once a year. There were six wells on the lease with a 12-bbl. production and oil cutting about 1½ per cent. Rigs, boilers, casing, everything except actual necessities were gone. Here is how I solved the problem.

"I brought a 2-inch line out of the stock tank about 2 or 3 inches from the bottom. The first fitting was a cast iron stop. Next was a horizontal check valve and then an L and nipple looking down with a quarter swing at the bottom. Into this I hooked about four joints of line pipe looking straight away from the tank. On the last joint was a return L and from that the line was laid right back to the tank, a riser at the end going up the tank to about fluid level and into the tank again.

"At the outer end of the line the last joint was laid over a ditch or pit about 18 inches wide, and this was covered with sheet iron and dirt while an old boiler smokestack was used for a chimney.

"At the outer end was the gas line with a jet burner extending under a 2-inch pipe a short distance. When my tank was nearly full I would allow my receiving tank to fill up with salt water. This I would then run into my stock tank, putting in all about 18 inches of salt water.

"When the valve on the heater line is opened and the fire lighted in the heater the salt water will circulate freely without the oil going through the heater at all. Circulation will be slow at first and by 'heads,' but will increase as the water becomes warmer.

"A 250-bbl. wooden tank of oil sheltered by a tank house can be heated in about 12 hours to 120 degrees Fahrenheit.

"This outfit was used on crude from the Glen sand produced a few miles east of Okmulgee. Whether or not this would work on an unprotected steel tank I do not know, but I do know that it will work on a wooden tank that is sheltered from the cold wind.

"The crude oil mentioned should settle out nicely at 120 degrees Fahrenheit, but if it doesn't, one could place on the discharge line a lubricator such as is recommended by the manufacturers of treating reagents and feed the reagent into the hot water as it circulates and be sure of good results.

"The most important part of this system is the check valve, as the water will not circulate without one or if the one in use becomes fouled by rags or sticks.

"A neighbor of mine laid his 2-inch pipe in the bottom of the ditch and put the fire on top, that is between the tin top and the 2-inch coil and claimed that he got better results as the fire didn't come in contact with the pipe, which resulted in a more even circulation and not so much by heads. I know that he had a very efficient plant.

"I hope this will be of use to someone.—C. S. H."

REPRESSURING MAY HELP

My company is operating a large lease with 58 wells, the average depth being 1,800 feet. The average production per well per day is slightly less than 1 bbl. of oil and a little over 2 bbls. of water. During the past year the company has about broken even on the operation of the lease and it is evident that its economic limit has been reached. Under present conditions in the industry would you recommend that the wells on this lease be plugged and abandoned or that serious consideration be given to repressuring—S. S. T.

A lease of this kind should never be abandoned without giving the most thorough consideration to the possibility of increasing production and decreasing lift costs by repressuring. It is possible that this lease may yet yield a profit under repressuring operations if the conditions for that are favorable. It is believed that your company will do well to base its disposition of this lease upon the recommendations of its engineers, remembering that the abandonment of the lease ends all chance for further profit except through salvaging old equipment.

INCREASING THE GRAVITY

In an effort to increase gravity on one of our leases we have taken the following steps:

1. Installed 100-bbl. and 200-bbl. gas-tight tanks.

2. Drop the oil through flume in the gun barrel and save the free gas vapors by having a special gas trap made from a welded steel (42-gallon) barrel placed on top of the gun barrel. A vacuum line on this small gas trap saves the gas which would otherwise be lost through the safety pop-valves with which the gas-tight tanks are fitted.

3. Vacuum-pressure gauge is kept on the battery of tanks in order to keep the safety-pop valves within the required factor of safety for this size of welded tank.

4. Owing to the small size of the tanks, the oil is run from each tank daily, and bottoms of tanks are kept free from basic sediment all the time.

5. The gun barrel is flushed out with salt water at least once a week. The entire battery is inspected daily for leaks which would allow any of the gas to escape.

Two wells pump into this battery, one of which produces 300 bbls. of pipe line oil, the other produces 150 bbls. of oil and about 1,000 bbls. daily of water. On tests made separately, the well making pipe line oil has repeatedly shown better than 36 Baume gravity and has gone as high as 36.9 degrees—the other well shows oil of 35 gravity or less,and by running both wells through the same gun barrel a resulting gravity is obtained, amounting to 36 degrees. However, about one tank out of every five falls below 36 degrees gravity, with a resulting loss in premium of 5 cents per barrel. Both wells make a fairly large volume of gas (about 180,000 cubic feet daily together).

We should like to know if there are any steps which we might take to bring the gravity still higher. We are not familiar with the practice of maintaining gravity in the Oklahoma Field and will appreciate knowing of any other steps which we might take to improve gravity on this particular lease.—H. H.

You are to be congratulated upon the methods that you are employing and the results that you have obtained. It looks as if you were holding up the gravity of your oil about as well as can be expected.

Evaporation can take place only when vapors escape from the oil. It is stimulated by heat and by the circulation of air and gas over the surface of the oil so that the air or gas that has become saturated with the petroleum vapors at a certain pressure and temperature is replaced by fresh air or gas that is capable of taking up and carrying off more of the petroleum vapors. Consequently tanks that are permitted to breathe freely into the air usually allow serious evaporation losses.

Petroleum vapors themselves tend to build up certain vapor pressures in tight tanks. If the vapor pressure is continually relieved by the application of vacuum, the petroleum vapors are continually drawn off and the gravity of the oil is lowered. Therefore, the maintenance of a few ounces of pressure in tight tanks is advantageous.

It is suggested that the vacuum on the small gas trap be cut down as low as possible and that a pressure of a few ounces (below that required to pop the safety valves) be maintained on the tanks.

A slightly higher gravity might be attained by allowing the oil to stand in gas-tight tanks for 24 hours or longer to allow b.s. and other suspended impurities to settle out. There are many cases on record where the gravity of oil has been raised by allowing the oil to stand in gas-tight tanks long enough for the impurities to settle out. Even in large storage tanks of 55,000 to 80,000 bbls. capacity, oil that has stood for 30 days has shown an increase of 1 to 2 degrees in gravity owing to this settling out of impurities. There is, of course, a slight volume loss resulting from the impurities settling out.

Painting tanks white is reported to be advantageous in that it tends to reflect rather than to absorb heat from the sun.

In gas-lift work and also in repressuring operations the gravity of the oil has been raised by using wet rather than dry gas.

For further information upon the prevention of evaporation losses you are referred to the following publications of the United States Bureau of Mines:

"Oil—Storage Tanks and Reservoirs With a Brief Discussion of Losses of Oil in Storage and Methods of Prevention," by C. P. Bowie, Bulletin 155, 1918.

"Prevention of Evaporation Losses in Lease Tanks," by J. H. Wiggins, Technical Paper 319, 1921.

"Evaporation Losses of Petroleum in the Mid-Continent Field," by J. H. Wiggins, Bulletin 200, 1922.

"The Use of Vapor Tight Tankage in the Oil Fields," by Ludwig Schmidt, Reports of Investigations, Serial No. 2442, 1922.

"Methods of Decreasing Evaporation Losses in Petroleum," by J. H. Wiggins, Technical Paper 319, 1923.

"A Floating Roof for Oil Tanks," by Ludwig Schmidt, Reports of Investigations, Serial No. 2547, 1923.

"Effect of Tank Colors on Evaporation Losses of Crude Oil," by Ludwig Schmidt, Report of Investigations, Serial No. 2677, 1925.

"Reduction of Breathing Losses From Vapor Tight Lease Tanks," by Ludwig Schmidt, Reports of Investigations, Serial No. 2834, 1927.

Most of these can be obtained at nominal cost through requests addressed to the Superintendent of Documents, Public Printing Office, Washington, D. C.

FURNACE FOR HEATING BIT

Could you give me in the columns of your valuable paper rough details of a forge to burn crude oil or kerosene in which to heat a bit? We generally use coal or charcoal here, but find that is very expensive, as freights are so high.—A. M., Vailala River, Papua.

Investigation by this department failed to reveal any concern manufacturing a standard forge suitable for burning crude oil or kerosene, so as apparently the most direct method of conveying to you the information desired, your inquiry has been submitted to three manufacturers of furnaces with the request that they communicate with you direct.

DISMANTLING STEEL DERRICK

I would appreciate very much any information you may be able to give me regarding the dismantling of a steel derrick. I have a job of this kind to be done and don't know exactly how to go about it.—G. S. F.

The method of dismantling a steel derrick is simple if the rig is of ordinary construction. The crown block and other heavy parts on the top may be lowered by use of an ordinary block and tackle. Then each section on down the rig is unfastened and lowered to the ground, taking the girts and the cross braces alternately. The block and tackle, of course, are carried lower as the work of dismantling proceeds.

Blackor is granular and can be flowed on evenly with electric arc. No insert material necessary. Nothing to break off.

4 records BY BLACKOR

1 Cones

In hard shale using cones, 10⅝", one set not hard-faced, made 2 feet and a second set made 9 feet. Both sets of cones were NEW. A used set was then run in *dressed with Blackor* and made 11 feet in the same formation. The Blackored cones showed far less wear after drilling 11 feet than the undressed cones showed at 2 feet. This is an actual record—one of many made in California fields during the past month.

2 Fishtails

A 10⅝" fishtail dressed with an ordinary hard-facing material made 2 feet. Then a Blackored fishtail was run in and made 29 feet—in the same formation. It was followed with another Blackored fishtail which made 32 feet—through some of the toughest formation encountered in California fields. With Blackor the same bits in the same formation did fourteen times as much digging—or more.

3 Discs

At Maud, Oklahoma, two discs *dressed with Blackor* starting under surface pipe made 550 feet of hole in 15 hours running time as compared to only 75 feet of hole made by discs not Blackored. The - - - - Drilling Company drilling this hole states that Blackor is by far the best hard-facing metal they have ever used and that the Blackored discs when pulled were not under gauge and were again placed in service.

4 Core Bits

The - - - - Oil Company at Taft, Calif., drilling many wells in that territory, have found by actual test that the average core bit faced with Blackor does 40 per cent more coring than bits with hard-metal inserts. Also, that fishtails on their lease have made a very high average over fishtails with metal inserts.

These are bona-fide results offered by various Companies specifying Blackor. Additional records are on file and we shall be pleased to submit them for further investigation.

Ask for Descriptive Booklet.

Blackor Company

Manufacturers

215 W. Seventh St., Los Angeles, Calif.

Distributors:

Big Three Welding & Equipment Co.
Stores at Fort Worth, Houston and Tulsa

Great Northern Tool & Supply Co.
Billings, Mont.; Kevin, Mont., and Kemmerer, Wyo.

PROTECTED BY AMERICAN PATENT PROTECTION CORPORATION

BLACKOR

-the Super Hard-facing Product

KANSAS FIELDS

(Continued from Page 48)

11, made a 50-bbl. well in sand at 1,910-22 feet. The Texas Company's No. 1-C Edwards, NE cor. NW SE, Section 21-23-11, made 100 bbls. from sand at 1,860-98 feet. Empire Oil & Refining Co.'s No. 1 Hillman, NW cor. SE NE, Section 35-23-11, is dry and abandoned at 1,918 feet. C. Kayser's No. 1 Moore, SW cor. Section 5-26-10, is dry and abandoned at 2,229 feet.

Harvey County

McPherson Oil & Gas Co. has dug the cellar for No. 1 Stanffer, C NW, Section 11-23-2w.

Marion County

Empire Oil & Refining Co.'s No. 1 Jensen, SE cor. NW, Section 26-22-5, is dry and abandoned at 2,719 feet.

Reno County

A. F. Perry and others made location for No. 1 Oswald, NE cor. SE, Section 30-22-5w.

Morris County

General Utilities Co.'s No. 1 Pape, NE cor. NW NE, Section 15-16-7, was completed for 1,000,000 feet of gas in sand at 1,450-52 feet.

Rush County

Barnsdall Oil Co. made location for No. 1 Brock, C SE SE, Section 21-17-17w.

Sedgwick County

Alladin Oil Corp. and others' No. 2 Smyser, SE cor. SW SE, Section 36-25-1w, Valley Center Field, is a rig on the ground. Marland Oil Co. made location for No. 1 Westerfield, NW cor. SE SW, Section 16-25-1. George L. Miller and others made location for No. 1 Unknown, NW cor. SW, Section 31-25-1. Davis, Skelly Oil Co. and others' No. 1 Wilson, NE cor. NW NE, Section 1-26-1w, is a rig on the ground. Derby Oil Co. made location for No. 1 Hastings Addition, NW cor. NE SW, Section 6-26-1. Fleeger & Houston moved a rig to the location for No. 1 Bennefield, CNL SW, Section 6-26-1. Pyle & Sutter made location for No. 1 Caldwell, NW cor. SE SW, Section 6-26-1. Vickers Petroleum Co. staked location for No. 1 Nassen, SW cor. NW SE, Section 6-26-1. Producers Exploration Co. has the rig up for No. 1 Arnhoff, NW cor. SW SW NW, Section 17-26-1. George L. Miller and others moved the rig out for No. 1 Schaffer, NW cor. NE, Section 9-27-2w. Wentz Oil Corp. made location for No. 1 Nelson, SW cor. NW, Section 23-27-2w. Magnolia Petroleum Co. made location for No. 1 Wise, NW cor. Section 36-28-2w. Dickey and others made location for No. 1 Robbins, NW cor. SW, Section 21-28-1.

Sumner County

Shell Petroleum Corp. is erecting the rig for No. 1 Taton, CSL SE NW, Section 36-31-2. Davis and Harreld Petroleum Co.'s rig is up for No. 1 Schwartz, SE cor. NE SE, Section 27-34-2.

ROCKY MOUNTAIN AREA

(Continued from Page 57)

at 4,372 feet. The well made 756 bbls. initial and is holding up to around 600 bbls. One other well is drilling on this dome this being the Continental's No. 2 Elder, SW NE, Section 18-9-68, bottomed at 2,350 feet. The Continental does not contemplate any extensive drilling in the Wellington-Fort Collins district at this time and will confine its development to wells required by lease contracts. It will take several months to complete all of the details in connection with the transfer of properties and no change in personnel is expected at this time. A number of employes will have the option later on of going with the Union or remaining with the Continental. District Manager Charles H. Sherman, of the Union company, will continue with his regular duties for the time being. Part of this work will be in connection with Union activities in Texas.

Stanley Barrows and others' No. 1 Barrows, NW cor. SE, Section 7-11n-68, on the Round Butte Dome, north of the Wellington structure, is resuming with the intentions of drilling to the Sundance sand. It is through the Muddy and Dakota and close to the top of the Lakota and is bottomed at 1,900 feet. At 1,893-1,900 feet it ran into a bed of asphalt which is sufficiently liquid to ooze into the hole and underreaming is in progress to lower the 6⅝-inch to make a shut-off.

In the Tow Creek Field in Routt County, the Hynds Oil Co.'s No. 2 State, SW NW, Section 17-6n-86, is bottomed below 3,110 feet and appears to be a commercial well, making considerable gas with the oil from the shale. It has not yet been tested. The Texas Production Co.'s No. 4 Belle Dennis, NE SE, Section 7-6-86, is making new hole for the first time in several weeks and is drilling at 3,992 feet with cable tools and presumably close to the Dakota. It was drilled to 3,957 feet with a rotary. This is a test well to the Sundance which has not previously been drilled on this dome. Same company's No. 1 State-Oliver, NE SW, Section 18-6-86, will be deepened from 3,165 feet where it stopped for a test of production.

In Moffat County, the Ohio Oil Co.'s No. 1 State, SE cor., Section 16-12n-100, on Reiter-Foster acreage on the Hiawatha Dome, is still held up at 3,165 feet fishing for bailer. On the Iles Dome, the Midwest Refining Co.'s No. 3-SD Shaw, NE NE, Section 27-4n-92, is bottomed at 3,214 feet and rigging to resume after swabbing. It went out of a sand in the Morrison back into shale at 3,212 feet. At this depth fluid rose 500 feet in 16 hours, of which 11 bbls. was oil. The Sundance is the objective. Same company's No. 24-SD Parkinson, SE NW, Section 22-4-92, is bottomed at 2,830 feet in shale and underreaming and cleaning out. It was making 3 bailers of water per hour.

Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3-92, in the fault block south of the Iles Dome, is drilling at 2,091 feet with nothing of importance since the show of light oil in shale at 1,120 feet. The Texas Production Co.'s No. 36 Lloyd, SE cor., Section 21-4-92, is drilling at 3,007 feet with hole full of water from above. It is not yet in sand. On the Moffat Dome, the same company's No. 11 Knowlton, SE cor., Section 33-5n-91, is still waiting for cotton seed hulls to mix with mud, and its No. 5 Wick, Section 10-4-91, is bottomed at 4,596 feet and underreaming at 4,287 feet to lower the 6¼-inch.

In Jefferson County, the Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69 (corrected) is drilling at 720 feet, after being delayed by a fishing job that has been cleared up.

Kelly Oil Co.'s No. 1 State, SE cor. NW, Section 36-14-57, in Lincoln County, is bottomed at 1,397 feet and has not made any new hole since a show of oil was reported at this depth in November. Work was suspended for the holidays and since then the boiler has been moved back and when fire was built, it was found that the flues were leaking and had to be replaced.

In Fremont County, the Continental Oil Co.'s No. 2 Vezetti, NE NE, Section 11-19-70, Canon City district, is bottomed at 2,446 feet and is being tubed to go on the pump.

Thirty-eight farmers in the vicinity of Peetz, in northeastern Colorado, are organizing the Consumers Oil Co. with a capital of $20,000 to sell gasoline and oil under a co-operative plan. Merchants of Lyons, Colo., in Boulder County, are financing a shallow test in the heart of the city, the administration being in charge of the work. A sand is expected at 250 feet.

Wyoming

The number of wildcat wells shut down in Wyoming for the winter showed an increase this week. The Midwest Refining Co.'s No. 1, SE Section 25-37-117, on the Little Gray River structure in Lincoln County, closed down at 769 feet until spring. Nine of the Producers & Refiners Corp.'s wells are shut down, though some of these operations have suspended only temporarily and will be under way again shortly. The wells shut down include the Garland, in Big Horn County; Hatfield and No. 8 Wertz in Carbon County; Muskrat and No. 2 Sand Draw in Fremont County; North and South Baxter Basin in Sweetwater County; and Torchlight, in Wyoming; and Pole Mountain test in Colorado. The California Co.'s No. 1 Wyss, South Cottonwood, and No. 1 Bushell, Snyder Basin, both in Sublet County, are shut down temporarily.

One completion was reported in Salt Creek, this being the Midwest Oil Co.'s No. 1-SD-2, SW Section 23-40-79, deepened to the second bench of the Sundance at 2,845-2,918 feet, and making 31 bbls. initial. The Ohio Oil Co.'s No. 7 Harrison & Cooper, Section 5-19-78, Rock River Field in Carbon County, was completed at 3,651 feet with an initial production of 120 bbls. The Ohio has one other drilling well in that field this being its No. 2 H. & C., SW NW, Section 27-20-78, is drilling at 3,390 feet. The Continental Oil Co.'s No. 1 Herrick (formerly Union Oil Co. of California), NE SE, Section 1-16-76, Little Laramie Dome, in Albany County, was abandoned at 2,211 feet after failing to find production in the Dakota series. The Lenco Petroleum Co.'s No. 1 Rousseau, NE NW, Section 33-51-100, Oregon Basin Field in Park County, completed at 3,828 feet in December with a production of 185 bbls., has been deepened to 3,878 feet and is flowing 300 bbls.

In Lincoln County, the Midwest Exploration Co.'s No. 1, SE SW, Section 35-22-115, Waterfall structure, is drilling at 1,910 feet in buff colored sand with 1,850 feet of water in the hole.

In Sweetwater County, the Prairie Oil & Gas Co.'s No. 1 Tucker, NW SE, Section 18-13-99, Alkali Creek Dome, cemented the 8¼-inch at 2,480 feet and is standing. The Ohio Oil Co.'s No. 1 Humphreys, SW NE, Section 2-12-101, Canon Creek Dome, is drilling at 1,900 feet.

The California Co.'s No. 1 Union Pacific, NE NW, Section 7-17-116, Muddy Creek Dome in Uinta County, is bottomed at 2,253 feet and repairing engine.

In Carbon County, the Producers & Refiners Corp.'s No. 7, Section 7-26-89, Wertz Dome, is drilling up bailer at 3,509 feet, and its No. 1, NE NE, Section 14-25-89, Sherrard Dome, is bottomed at 3,027 feet and circulating underreamer at 3,014 feet.

In Big Horn County, the Prairie Oil & Gas Co.'s No. 1 Chilcote, Section 35-56-95, Little Sheep Mountain, is drilling in the Deadwood at 2,250 feet with nothing showing since it had a little gas at 1,300 feet.

Park County Field Work

In Park County, the Ohio Oil Co.'s No. 1 Pulley, NW NW, Section 27-53-101, on the Shoshone Dome near Cody, is still trying to plug off bottom water. Total depth is 4,780 feet. It had 3,500 feet of oil in the hole before water began appearing. On the Frannie Dome, the Midwest Refining Co.'s No. 1 Peters & Kirk, SE cor., Section 23-58-98, is drilling at 305 feet, and its No. 36, SE cor. NW, Section 25-58-98, half a mile to the south of the discovery, is drilling at 565 feet in brown shale. The Midwest's location for No. 6-A, NW cor., Section 25, was suspended in favor of the No. 36 location. On the Oregon Basin Dome, the Wyoming Western Oil Co.'s No. 3 Hough, SE SE, Section 18-51-100, is drilling at 3,512 feet, and the Wisconsin Holding Co.'s No. 2 Rousch, Section 9-51-100, is drilling at 2,317 feet. The Cody Petroleum Co.'s No. 7 Klindt, Section 7-51-100, is drilling at 2,840 feet, and the Ohio Oil Co.'s No. 1 Sonners, Account 3, SE Section 8-51-100, is standing cemented at 3,765 feet in the top of the Embar. The Big Horn Petroleum Co.'s No. 1 Trumbull, SW NE, Section 7-51-100, is drilling at 3,585 feet, and its No. 1 Hoodoo, SE SE, Section 36-51-101, is drilling at 4,700 feet and has 3,500 feet of water in the hole. This well is on the west flank of the south dome. The Producers & Refiners' No. 1, Section 29-52-100, is bottomed at 563 feet and mudding in water to cement cellar. On the Sage Creek Dome, the Producers & Refiners' No. 1, SE NW, Section 7-57-97, is drilling at 1,440 feet in shale and carrying the 10-inch at 1,406 feet.

The formal transfer of the Hay Syndicate's working interest in 80 acres in Section 32-40-78, and 80 acres in Section 8-39-78, east side of Salt Creek, to the Continental Oil Co., for $50,000, has been consummated following approval of the deal by the Interior Department. Both leases have been operated by the Continental. There are eight wells on the lease.

Contract for stringing pipe for the Western Public Service Co.'s gas line from Baxter Basin to Salt Lake City has been awarded to William Utzinger of Casper, and Tom Weadick, of Parm. Actual construction was begun this week at Salt Lake City with the arrival of the huge ditcher. The start was made at the mouth of Emigration Canon.

Montana

Two new producers were completed the past week in the Pondera Field, Pondera County. The Ponting interests found a producer good for 25 bbls. on Section 16-27-4, on the Rice State lease, and the Ohio Oil Co. has a well that started off at better than 150 bbls. on Section 22-27-4 on the Munson lease.

A gas pipe line is proposed to supply Conrad with natural gas, and engineers are now on the ground preparing to run surveys. This line was at first proposed to carry gas from the Pondera Field to Conrad, but after the field was developed for a few months, it was apparent that the gas from the Pondera wells did not hold up enough to warrant laying a pipe line to Conrad. A special election held in 1927 by the citizens of Conrad gave a franchise to E. B. Emrick and M. S. Darling to pipe the city for gas, and these two operators propose to lay a 6-inch line to the Sunburst Field and obtain a gas supply from that area.

The new pipe line that is to help carry crude from Pondera to Conrad is ditching and preparing to lay pipe shortly. This line will operate in competition with the Texas Pacific line that now carries all the oil from the field to Conrad.

A new pipe line is announced for the Bannatyne Field. At present the Bannatyne Field has no outlet for the crude but E. B. Coolidge, head of that company, states his firm has completed arrangements for the laying of a line as soon as spring opens and that his company would have a comprehensive drilling and development program for the coming season. The Archer interests have announced a program that included the drilling of 12 wells in the Bannatyne Field. The Fifty-Six Petroleum Co., which recently bought a tract of leases in the central part of the Bannatyne Field, has announced a program that calls for 16 wells.

Sunburst Field

Sunburst Field was practically shut down the past week on account of cold weather. On the other hand, 14 wells are drilling in Pondera Field. Ponders expects four new completions soon.

The wildcat wells over Montana are still active. At Lewistown the community well that is to make a test of the Lewistown Dome has the rig about finished and expects to be spudding in a day or two. The wildcats drilling near Great Falls are at 980 and 720 feet, respectively, and expect the pay around 1,500 feet. This is a shallow showing that was discovered in a well there last fall.

The Texas & Pacific started up on the Mud Creek Dome, about 35 miles north west of Great Falls, and is expected to report a completion in three weeks with good luck. This wildcat is on Section 12-22-1.

The Eden Oil Co.'s well in the foothills of the Belt Mountains is completely snowed in and nothing had been heard for two weeks. The camp has sufficient provisions for the winter.

Wildcat Tests

The Standard Oil Co. of California is drilling at 700 feet in its wildcat near Ringling, on the Crowley ranch, and this will be a deep test that is not expected to reach an interesting depth before next summer.

The Ohio Oil Co.'s wildcat on the Cherry Ridge Dome near Harlem is at 2,315 feet and has a fishing job. This well will finish in early spring with good luck.

Charles Bannatyne, rancher and owner

of the land in the Bannatyne Field was taken to Great Falls and placed in a hospital with flu.

ROCKY MOUNTAIN PRODUCTION
Daily Average Runs Week Ended January 12

WYOMING	
Salt Creek	31,730
Big Muddy	2,490
Grass Creek	2,380
Elk Basin	980
Frannie	280
Ferris	20
Rock River	2,280
Lance Creek	340
La Barge	2,900
Poison Spider	1,290
Oregon Basin	2,700
Osage	450
Lander	430
Byron	30
Lost Soldier	3,760
Simpson Ridge	70
Dutton Creek	50
Rex Lake	150
Hamilton Dome	720
Total Wyoming	53,050
MONTANA	
Cat Creek	1,520
Kevin-Sunburst	7,090
Pondera	2,260
Total Montana	10,870
COLORADO	
Florence	1,086
Moffat	989
Fort Collins	2,607
Iles Dome	1,520
Rangely	100
Tow Creek	509
Boulder	25
Total Colorado	6,836
NEW MEXICO	
Rattlesnake	732
Hogback	520
Artesia	1,065
Cap Rock	119
Total New Mexico	2,436
Total Rocky Mountain	73,192

OPPORTUNITY IN ROAD OIL MARKET RESEARCH

(Continued from Page 35)

treated, we shall have a balance of approximately 292,500 miles requiring treatment.

Great Bulk Untreated

"Bituminous applications on earth and sand-clay are almost negligible in as much as the work has been confined to a few scattered localities. Let us say that 2 per cent have been treated out of a total of 708,000 miles in our inventory, and we have a balance of 694,600 miles subject to treatment.

"From the great network, 1,825,000 miles of unimproved road a certain fraction will be advanced into the improved class annually but we may exclude this for the time being as we still shall find plenty of work in sight. Our annual program of resealing and surface treating is set up with a total of approximately 1,022,000 miles of road.

"We may require more or less material than we now estimate, but using the figures indicated by our experience to date we find the quantity necessary for the first year of this huge program reaching the stupendous figure of approximately 8,580,000,000 gallons.

"The best information available through government resources indicates that about 750 tons of tar are used annually for road building purposes and probably two-thirds of this or about 110,000,000 gallons go to surface treatments. This would reduce the above figure to approximately 8,470,000,000 gallons.

"If we conservatively assume that there has been no increase in the rate of grading and draining since 1926 we have a total of 53,800 miles of road requiring initial surface treatment each year, which will add approximately 454,502,400 gallons to the above estimate, giving a grand total of about 9,000,000,000 gallons of surface treatment material or nearly 36,000,000 tons.

Oil Industry's Interest

"This is a theoretical possibility only. It could not be met, if authorized and financed. But the figures are conservatively arrived at and indicate the possibility of a huge market for surface treatment road oils.

"Even when we compute the somewhat smaller amounts of oils required in subsequent years for the continued treatment of these types of light oiled surfaces the figures remain stupendous.

"Let us turn for a moment now to examine the condition of the oil industry. The heavy crudes, domestic and imported, have amounted to about 140,000,000 bbls. annually for the past three years, and the carry over stocks have increased during the year ending July 31, 1928. Gas oils and fuel oils have been consumed in greater quantity, but in spite of this fact, stocks of these have increased.

"Now, some heavy crude oils of a highly asphaltic character can be made suitable for surface treatment use with only a slight preliminary alteration from their crude state. Any elaborate treatment of such oils unless their residuums are seriously demanded in the asphalt market, is uneconomical. Also, by changing refining manipulations the various basic constituents of crude petroleums may in many cases be passed from one to another product of the refining process in the course of operations, so that market demand may be met. Fuel oils and gas oils need not be the end of refining processes. If there is too large a stock of these, continue the refining until road oils result. Gasoline and kerosene may be used as cut backs where desired and thus gas stocks held somewhat lower.

Variety of Adjustments

"In fact, the variety of adjustments possible at the refinery are ample to develop the conversion of all crudes available into products that will meet market demands for materials of the respective base constituent. Refiners in this country have been operating for several years past at about 80 per cent of their capacity so that a tremendous amount of additional refining could be done to accomplish the conversions referred to.

"The production of fuel oils has actually reached a point where it hardly pays and the use of such oils is being encouraged in domestic outfits that will be found uneconomic when fuel oils go on a paying basis for the oil producers. This condition will further retard the use of such oils as they recover stability of price.

"To treat by one of the several possible methods the 1,022,000 miles of road would probably average at least $1,200 per mile, or $1,226,400,000, or approximately the entire anual road bill of 1925. Certainly the entire annual road bill could not be devoted to this purpose, but a fifth of it might be, or $245,000,000. The present road oil bill is $10,500,000. The possibilities appear to be about 24 times that figure.

"This opportunity of the oil industry is not, however, to be had for nothing. As well as being an opportunity, it involves what might almost be called a duty of the industry—for it is a commercial and an economic duty to develop the best and most enduring use of our natural resources. Until it is necessary to use our crude oil resources in the form of fuel oils, it is more truly economic to use them in the more enduring form of road oils than to burn them up.

"There is no agency better equipped, none so well equipped, in fact, to carry on necessary experiments to determine how best to use light oil products in low cost road building. No other agency can produce materials in experimental quantities such as are needed for these experiments. The Bureau of Public Roads has at times been sponsor for a large variety of test roads, endurance tests of concrete beams, impact tests, abrasion tests of various materials. It has experimented with inorganic road building materials in large number, but it has no practical means of experimenting on a sufficiently large scale with a variety of light oils.

Obvious Reasons

"There are several obvious reasons for this. First, it will be expedient at least that a large variety of crudes be made the basis of the usable road oils. These oils themselves must be topped to produce as much as possible of other petroleum products consistent with producing the light road oils as residues. The resulting road oils must be so similar in character, regardless of their crude source, and of their previous treatment as to be obtainable under a narrow range of specifications. The practicable, large scale, commercial production of light road oils, so that they may be purchasable on specification for a certain definite use, anywhere in the South, Middle West, and West is not a laboratory problem. It is an industrial problem. For this reason it is a problem for the oil industry to solve."

PROPER CASING AND TUBING OF GAS WELLS

(Continued from Page 34)

the hole the more apt is this stress to rupture the structure of the metal since the direction of stress is changed from one of pure compression to transverse. The more often a well is blown, each blowing setting up a vibration, the more often the cracked crystalline sections slip back and forth on each other, each movement allowing the cracks to spread farther. Fluid sloshing up and down in the hole would theoretically also tend to bring the pipe nearer to the failure point.

Rusting of the pipe, which goes on rapidly unless protected by cement or proper mixture of mud, contributes to this breakdown, in that around each pit or irregularity minute cracks are apt to form which gradualy continue down to and join those in the interior due to slippage. Each union or extension of cracks, though none of them is visible to the eye, brings the pipe nearer to the point of failure.

Still another factor is continually at work lowering the usefulness of old casing. This is a hardening process, little understood, under which steel of this type through age alone continually becomes more brittle and thus more subject to fracture under a sharp blow.

I am sure that if some of you gentlemen could see sections of some of this "good as new" casing under a microscope the market value of used pipe would suffer a sharp decline. No one, in referring to a joint of used casing, unless he knows the history of that particular joint, can say that it is as good as new.

Safety Factor

Pipe with a collapsing factor of less than 2½ as compared to the hydrostatic pressure at the casing seat should never be run, nor should a string with a factor of safety of less than 2½ as regards the tensile strength of the joints ever be run. Pipe manufacturers recommend a factor of safety of three in both instances. All casing or used which is apt to be subjected to more than 400 pounds pressure should be given a thorough cold water test before being run into the hole. Each joint should be run up to a pressure at least 30 per cent higher than the hydrostatic pressure at the casing seat, this pressure being left on each joint for at least 5 seconds. This work is sometimes done by contract at so much per joint. When this is the case it should be supervised by a reliable company man, for its importance cannot be stressed too highly. In one of the three craters referred to earlier, the casing was tested by contract, a team of negroes doing the work. It may be that had the work been supervised by one of the company men the well would not have got away.

A rotary shoe or reinforced collar should always be run on the bottom of a string and should be either riveted or welded in place to prevent any possibility of backing off. After landing the pipe on bottom, it should, if it can be safely done, be made up once more. When cementing casing, it is generally considered best practice to pick up the slack, carrying the strain on the bradenhead, in this way leaving the pipe as straight as the hole will permit and distributing the strain equally over all of that part of the casing not supported by cement. The old cast iron bradenhead should now be out of date in high pressure areas. Still, many of these are to be seen in the Richland Field, and until a few months ago many were to be seen with both outlets closed with flat cast iron plugs, and this in a field of large volume wells with rock pressure of 1,000 or more pounds.

Three-String Casing Rule

The three-string casing rule in high pressure areas should be strictly adhered to. The first string need only be long enough to permit safe drilling. The second should, however, be long enough to protect any water or gas sands within a thousand feet of the surface, and should be as carefully cemented as the final string. This second string should be sufficiently heavy to withstand the rock pressures anticipated in the final string. It should also have a sufficiently large diameter to allow ample room for cement behind the collars of the next string to be run. In a neighboring high pressure field an attempt was recently made to deepen a 6-inch well from 1,900 feet to 2,600 feet. After turning off the collars, a string of 4½-inch was landed at 2,600 feet and returns finally secured. The clearance behind the collars in the new hole was, however, so small that when cement was started around it was necessary to use high pressure pumps to keep the plug in motion. Even then the plug finally hung up while still 200 feet off bottom, and the pressure developed by the pump was sufficient to part the 4½-inch casing a short distance below the bottom of the 6-inch. Attempts to economize such as this obviously are not good operating.

Use of Cement

We are, it seems to me, gradually beginning to realize the wisdom of using plenty of cement. Only a few years ago 40 or 50 bags behind a string of 6¼-inch casing in 1,200-pound areas was considered ample. Today we are using often as many as 300 bags behind such a string, and in every case are cementing up to the bottom of the second string. This much cement is not usually necessary simply to insure a good seat. Its additional functions are to reinforce the pipe and to eliminate corrosion from underground waters. In cases of long lived wells this latter function is of considerable importance and is one that is apparently being overlooked by many cable tool operators. Quick setting cements of various kinds seem to be here to stay. Certainly, however, good practice should allow at least five days for setting before the plug is drilled. Whenever possible, the casing should be bailed to bottom after drilling the plug and allowed to stand for a few hours. When, however, casing has been set on the sand this is not usually possible. In such cases, our company now makes it a practice always to bail the casing dry before drilling the plug, and to allow it to stand this way for a few hours. A bailing test should, in my estimation, be made obligatory in high pressure areas.

Some wells have been and others in the future doubtless will be apparently successfully cased without following the precautions I have suggested. These precautions are not original with me. They are instead the conclusion which successful operators have arrived at after years of experience, some of which in instances have been painful. Unfortunately there will probably always be a few operators who, mostly through lack of appreciation of what pressures of a thousand pounds or more per square inch really mean, will refuse to take advantage of the experience of others and who, instead, to save only a small percentage of their total investment, will be willing to take a chance. It is because of operators of this sort that our conservation departments need more authority and more money so that they may more adequately oversee field operations.

Proper Casing Methods

One further suggestion on proper casing methods which experience has shown to be valuable might be mentioned. This is the holding of regular round table meetings of all operators interested in any one area, these meetings for the purpose of frank discussion of proper casing depth, weight, quantities of cement to be used, etc., and attended by a representative of the conservation department. This has been the practice in Louisiana for the past two or three years, and has undoubtedly done considerable good. However, just across the line in a new high pressure area, where there has been no interchange of ideas, three wells have been completed, no one of them in a clean workmanlike manner. A fourth well blew

wild for close to a month before being brought under control, the owner of a fifth well is afraid he has set his casing too low, the owner of a sixth well has set his too high and is waiting to see, if he can, what others do before he deepens, etc. Water, controlled largely by casing depth, is apparently going to be of prime importance in this field. It is indeed unfortunate that the operators affected do not seem to understand that it is to the interest of each of them to get together and frankly discuss the situation, instead of each trying to conceal something from the others.

If you set a second string of good pipe, well cemented, at least a thousand feet from the surface, if you drill a straight hole to the sand, coring in to find the proper seat, if you set new pipe with a factor of safety of at least 2½, which, however, has been given a thorough cold water test, if you set this pipe in a hole filled with good mud, using plenty of cement and then further test it by bailing before drilling in, you are not apt to have any casing troubles. There are cheaper methods of casing wells sometimes used which are sometimes successful, but which if used too long will prove to be the more expensive in the end.

Proper Tubing Methods

Now as for proper tubing methods. I remarked at the outset that there had been no recent startling changes in casing methods. There have, however, been two recent improvements in tubing, or siphoning, methods that are real contributions.

One of these contributions is the use of jets in the siphon line, making it possible to remove water from low volume wells with working pressures down to 30 or 40 pounds. The Bureau of Mines has done some excellent work along this line. Much, however, is still to be learned. The steadily increasing value of natural gas at the well is resulting in attempts to recover production from wells which a few years ago would not have been bothered with.

Two principal types of jets are being used. One of these is simply perforated collars or nipples placed at intervals in the string, these intervals depending upon the well volume, diameter of pipe, working pressure and quantity of fluid to be handled. This type, the simpler of the two, has been quite successful. The other type used consists of true jets built into couplings of the desired diameter. Jets of this type are on the market. This type has also been quite successful and is the type most in use in this immediate area. Both types work on the same principle, the introduction of small quantities of dry gas into the column of fluid inside the siphon pipe at fixed intervals. the expansion of this gas after introduction into the column serving to lighten the effective weight of the fluid. The Bureau of Mines will, I am sure, be glad to furnish you with more detail concerning the use of jets.

Production Method

In some instances all the production from the well is taken into the gathering system through the siphon. In other instances enough is taken through the siphon to insure all fluid entering the well being removed, with the balance of the production being taken through the casing, and in other instances all production is taken through the casing and the siphon blown when necessary into the air. Under competitive conditions, where all possible gas is being taken out of a well, this latter method is often necessary. It is, however, wasteful. In many instances siphons are left open to the atmosphere all day. A recent check on one well showed a million feet daily being thus blown into the air. We are planning, in the near future, on attempting an experiment which if successful will, under some working conditions, allow the siphon to operate continuously against atmospheric pressure into a separator, trapping the fluid off and then jetting the gas, which would normally be wasted, back into the gathering line. The energy necessary to jet this gas back into the line is to be secured by holding the working pressure on the well at a slightly higher point than that on the gathering line. Theoretically this can be accomplished when sufficient gas is being taken out of the well.

A few years ago one of the largest gas companies in this immediate area changed all its well connections from 4-inch to 6-inch, so that in blowing the well to remove accumulated gasoline and water a minimum back pressure would be held on the sand. Some of the wells affected ranged in volume from 40,000,000 to 50,000,000 feet. The move was an expensive one. We have since learned the folly of lowering the back pressure on the producing sand any more than absolutely necessary, that each lowering of back pressure brings water that much closer to the well. Today there are many producing wells, equipped with siphons, wells that never have been blown into the atmosphere. We have learned that normally the proper time to tube a well is the day it comes in, feeding at least a part of the well's production through the tubing at all times, so that any fluid entering the well is removed at once rather than being allowed to accumulate in a head working against the sand.

Use of Tubing

In some fields it is now largely the practice to bring wells in through tubing. Where this is possible, I belive that it should be done. It is not, of course, possible in cable tool fields, nor is it practicable in most rotary fields. The mechanical difficulties formerly attendant to running tubing into large volume high pressure wells has prevented the tubing immediately after completion, and often has postponed this tubing until after the well had watered up. The mechanical difficulties included the danger of fire, the danger to the men, of the pipe getting away, of sand cutting off connections, etc., but above all the danger, particularly in this territory of unconsolidated producing sands, of pulling the well into water. One small local field was ruined in this way. Due to the absence of a sharply defined structure, water occurred along with the gas, necessitating early tubing. Wells ranged in volume from 35,000,000 to 45,000,000 feet, with closed pressures of around 1,200 pounds. To permit the installation of the tubing the wells were allowed to blow through the side connections, in some instances wide open. Invariably the wells made considerably more water after the installation of the siphons than they had before. A similar incident came to my attention a few days ago. This well, of moderate size, was allowed to relieve itself through a side outlet while the pipe was being run in. During the operation the well drilled itself farther into water, and before the pipe had reached bottom had apparently permanently killed itself.

The second recent contribution to proper methods of tubing which I referred to consists of a device for installing tubing of any diameter in wells with back pressures up to 1,000 or more pounds, without any appreciable loss of production, regardless of the depth, open flow volume, or sand or water content. I have seen tubing in several instances run into 3,000-foot wells against pressures in excess of 900 pounds with apparently less than a quarter of a million feet of gas lost during the entire operation. This, it seems to me, is a real contribution in that it permits the tubing of a well immediately after completion without damage to the well in any way. It further allows the safe tubing of wells which make large quantities of sand along with the gas. This heretofore has been practically impossible because of the danger to the well connections.

Description of Device

The device consists of suitable control heads, fool-proof snubbing equipment, and a tool for keeping the tubing closed until after it is landed on bottom. The control heads are on the market. Patents have been applied for on the balance of the equipment by an operating company which has been specializing during the past year in running tubing against pressure without loss of production, this work being done by contract.

In some instances the value of the gas saved in using this method of installation, as compared to the former wasteful method of running pipe open ended into a well being relieved into the atmosphere, is enough to pay for the cost of installation. In almost every case when damage to the well and field through the former methods is considered, a considerable saving is effected.

To sum up briefly: Present practice seems to favor tubing of wells as early in their life as possible, using this tubing to prevent the accumulation at any time of a head of fluid. Means are now available for tubing wells without loss of production. Good practice certainly should favor this method of installation. Much remains to be learned in connection with properly tubing the small volume low pressure wells. The use of jets in the tubing in this type of well has resulted in the recovery of considerable gas which otherwise would have been drowned out.

The increased value of natural gas is causing all of us to give more thought to the matter of properly equipping our wells. The result is bound to be the replacement of many of our present haphazard, careless methods and equipment by methods and equipment based on sound engineering principles. The last few years have been a distinct step in this direction.

PROPER CLASSIFICATION GAS COMPANY ACCOUNTS

(Continued from Page 35)

ments of railway companies, whose accounting methods are prescribed by the Interstate Commerce Commission, are readily understandable and all who are acquainted with the procedure prescribed by the commission can form a correct judgment of the financial status of any railway company by a careful examination of its financial reports. There is no reason why the same condition should not prevail in the natural gas industry.

Among some of the most important problems confronting a committee engaged in preparing a detailed classification of accounts would be that of making decisions as to the proper method of treating certain transactions and the proper answer to numerous questions which will naturally arise. The following may be considered typical:

Is the cost of the new business department a capital charge or is it an operating expense? It may be considered as an investment on the theory that the gross volume of business is increased, or as an expense as being an essential part of the company operations. The same arguments may be applied to the expense of publicity or public relations departments.

What is a proper basis for capitalizing a portion of general administration expense as being applicable to construction, to include a portion of executive, clerical and purchasing department salaries, and, incidental expenses relating to these departments? One method of arriving at such a portion is to apply to the total general administration expense a percentage that the total investment expenditures bear to the total over-all expenditures. Should any such amount, however arrived at, be capitalized under one account to be called "general construction overhead," or some similar name, or should it be spread over the various construction accounts as applicable to the expenditures which were used as a basis for arriving at the percentage used?

There are expenditures arising from changing of mains, services, etc., and other minor replacement jobs which are considered by some companies as a maintenance expense and by others as a charge to replacement reserve. A uniform method of treating these costs should be agreed upon.

Variation of basis of calculating depreciation and depletion tend to destroy the uniformity of financial statements and it is possible that some remedy may be arrived at to correct, at least partially, these present existing differences of opinion.

The producing companies have problems common only to themselves which should receive careful consideration. I will recite here some of the most prevalent.

Delay rentals on nonproducing leases are to a large extent handled as a charge against profits. Can not these rentals be considered as a cost of the lease in addition to the original consideration paid and therefore be capitalized? It seems unfair to penalize current profits with costs appertaining to properties other than those producing the revenue.

Is the cost of drilling dry holes a capital charge on the theory that such expense is incidental to the drilling of wells which do produce? Of course if a company follows the practice of charging all well drilling expense against operations, this question need not be answered, but where the practice is to capitalize well drilling costs it seems that the cost of dry holes should be considered alike with producing wells as there was a common purpose in drilling, that of maintaining a necessary supply.

The executives of the leading companies should consider the problem of more uniformity in classification of accounts as one of vital importance to the future of the industry, worthy of their immediate, collective and constructive action.

GAS BLOWOUTS IN LITTLE RIVER FIELDS

(Continued from Page 37)

good. The water apparently had little if any effect upon the well. Mud was also tried without success. Then 1,800 sacks (90 tons) of cement were pumped down for four hours until the cement began to run over the top of the surface pipe. This evidently sealed off the shallow crevices. The cement was allowed to set for 11 days with the well flowing wide open until January 8. On that date the well was closed in and showed a casinghead pressure of 1,000 pounds without any further blowouts.

Precautionary Measures

As a precautionary measure the well head pressure was lowered to 700 pounds by opening up the head slightly and allowing gas to escape through the riser. Under these conditions the well was killed within the first 24 hours from the pressure of water and mud accumulating in the hole. On January 11, mud, as heavy as could be handled by the high pressure pumps, was forced into the 8¼-inch through the well head. The pumps are still putting mud into the well (January 12, 1929.) The present plan is to continue to mud the well until it will take no more or until circulation is established to the surface, then allow the mud to settle for at least 24 hours, then pump mud again and let it settle, repeating these operations for the next 10 or 15 days. The well will then be plugged with cement and abandoned.

One of the most interesting features in the work of bringing this well under control was the successful outcome of introducing 1,800 sacks of cement through only 300 feet of 3-inch tubing run through an almost open hole and into a well blowing wild through the casing, with crevices extending some distance from the well, and taking four hours to get all of the cement into place. Certainly this does not conform with usual engineering practice. Some experienced operators have said that it could not be done but it was done most successfully and those who accomplished the work are to be commended.

T. B. Slick Wells

Prior to the occurrence of these two blowouts the T. B. Slick Oil Co. had obtained a large gas production estimated at approximately 50,000,000 cubic feet per day from the Cromwell sand at a depth of 3,220 feet in its No. 1 W. Wood in NE NE SW Section 26-7n-6e. In the latter part of October, 1928, this well was completed to the second Wilcox sand which was dry at 4,473 feet. It was then plugged back and the 8¼-inch casing perforated by whipstocking at 3,220 feet to produce the Cromwell gas that had been detected and tested with a sand tester when the well was drilled.

Well No. 2 on the W. Wood tract was completed on December 29 as a gas and oil well in the Cromwell sand at a depth of 3,120 feet. The pays in both of these wells were detected by systematically sampling and examining the

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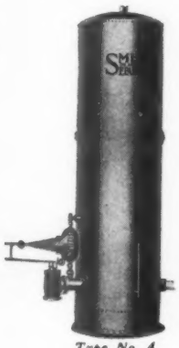
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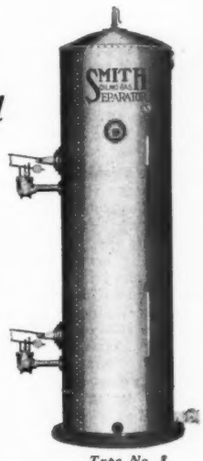

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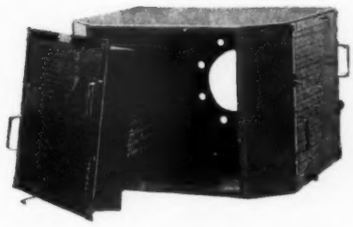
REED AIR FILTERS



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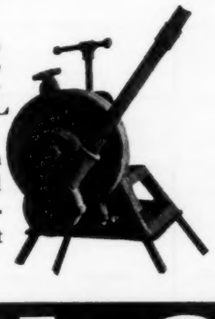

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rotary returns and by coring and testing the sands. It is believed that the value of these methods in extending the Little River Field has thus been fully demonstrated.

In this connection it is of further interest that the operator and drilling contractor together offered the drillers working on the first of these two wells a bonus of $500 if they could find production above the Wilcox sand and they found it.

Cost of Blowouts

The cost of a serious blowout may extend into high figures. Exact data are not available but consider the cost of a well drilled to a depth of 4,300 feet and lost. Add to this the value of the gas lost. Then add the cost of bringing the well under control. In case of fire, add the cost of the derrick and other equipment destroyed, and the cost of extinguishing the fire. It may or may not be necessary to include the loss of oil production that would have been obtained in the objective sand. This depends upon whether the objective sand is productive or dry. Recognizing that many uncertainties are involved, and taking these two blowouts in the Little River Field as examples of what may happen in that district, approximate cost figures upon one blowout and fire may be set up as follows:

Cost of well		$ 65,000
Value of gas wasted	$20,000 to	50,000
Cost of bringing well under control	10,000 to	20,000
Total if well is saved	$30,000 to	$ 70,000
Total if well is lost	95,000 to	135,000

If the well catches fire the following losses may be added:

Loss of derrick, rig irons and miscellaneous equipment	$ 5,000 to	$ 18,000
Loss of drilling equipment	20,000 to	65,000
Cost of extinguishing fire.	5,000 to	25,000
Total cost on account of fire	$30,000 to	$108,000

These figures are merely estimates, but they indicate the magnitude of the losses involved. Blowouts such as those described in this article probably cost no less than $100,000 each. This is enough to pay a single company many times the cost of preventing blowouts by the methods herein recommended.

Extent of Gas Field

Although it has not been definitely established that all of these wells are producing gas from the Cromwell sand it is logical to believe that such is the case. By using the average depth pressure gradient of 33.95 pounds per 100 feet of depth for deep wells in Oklahoma, as given in The Oil and Gas Journal of December 20, 1928, the recorded pressures of from 1,000+ to 1,200 pounds in the Mid-Continent well indicate that the depth of the gas sand is from 3,000 to 3,500 feet. This corresponds closely with the depth of the Cromwell sand in the Mid-Continent well.

The question is at once raised as to how extensively the productive area in the Cromwell sand has been drilled through without detecting the oil or gas that are present? Another question, that can be answered only by extensive drilling and carefully testing the Cromwell or other sands overlying the Wilcox is: How extensive is the undrilled portion of this gas area? Another question arises as to the occurrence of an oil pool in the Cromwell sand associated with this gas. As one field man aptly expresses it, the situation in the South Little River Field now has as many interesting points and question marks as a procupine has quills. No matter how these questions are eventually answered, the present situation as shown on the accompanying map (Figure 2) suggests the occurrence of an extensive gas area. The Carter Oil Co. is drilling a gas test in SW SE, Section 23-7n-6e, which should help toward answering some of the above questions.

Recommendations

In the light of recent events in the South Little River Field the advantages to be derived from carefully testing the productive sands overlying the Wilcox and also by guarding against high pressures and large volumes of gas in these formations are believed to be obvious.

The value of systematically sampling and examining rotary returns, and coring and testing all promising sands has been fully demonstrated by the successful completion of two large gas wells in the Cromwell sand in Section 26-7n-6e, by the T. B. Slick Oil Co. This procedure is not only an invaluable aid in locating shallow production during deep drilling operations but is an insurance against blowouts. Furthermore, it accurately establishes the points at which to whipstock into shallow production when that becomes desirable. These methods are unhesitatingly recommended in extending the development of the Little River and other deep fields in this district notwithstanding the haste that is required in drilling to the Wilcox sand.

Probably the most reliable insurance against blowouts from sands overlying the Wilcox is to set and completely cement in enough surface pipe to hold against any gas pressure and volume likely to be encountered at the depths drilled and then to bradenhead between the string of surface pipe and the 8¼-inch. Bradenheading will also permit the introduction of mud fluid between strings after the well is completed. The surface pipe should be set in a hard lime or other sufficiently hard and tight formation far below all surface crevices. It has been suggested that 500 feet of surface pipe completely cemented in is none too much. The practice of cementing in surface pipe set in a hard tight formation at sufficient depth to prevent blowouts around that pipe and to serve as an adequate anchor for the use of a bradenhead between the surface pipe and the 8¼-inch is recommended.

Another alternative which is recommended is to completely cement in the string of 8¼-inch casing. Experience has proved that in the South Little River Field only about half of the total length of 8¼-inch pipe (2,000 feet or less) is cemented in by 500 sacks of cement. To completely cement in the 8¼-inch will require 1,000 sacks or more. Because of the expense, the permanent loss of all of this long string of pipe and the fact that all shallow production is cemented off by completely cementing in the 8¼-inch string, it is believed that the use of deep surface pipe with a bradenhead is preferable for wells drilled to the Wilcox sand.

The use of extra heavy muds loaded with Baroid or iron oxide should be advantageous in controlling high pressure, large volume gas to prevent blowouts or to help bring them under control.

If a high pressure, large volume gas field is developed it may be good insurance against blowouts to use packing heads on the surface pipe (in the cellar) below the rotary table, or to use other types of blowout preventers, provided, of course, that enough surface pipe has been cemented in to render this equipment effective.

The use of mud loaded with some good clogging material such as sawdust, hemp rope fiber, cottonseed hulls, or other suitable material is recommended for bringing gas blowouts under control when the gas is blowing up through the ground outside the surface pipe.

Another Problem

In closing this paper it is not out of place to consider the problem of oil and gas well fires. In what manner do well fires such as that at the Carter well become ignited? Is it brush ignition in which particles of sand and other solid matter become heated sufficiently by friction against the steel pipe to ignite the gas-air mixture around the outlet? Is the gas-air mixture ignited by sparks from sand or other particles of solid matter impinging against steel or rock? Are sparks caused by static electricity responsible? Or what other causes may be responsible? Can it possibly be carelessness on the part of individuals? This must play a very small part because oil field workers know the danger and also the price of carelessness.

Where boilers and electric transmission lines are at a safe distance from a well, as they were in the case of the Carter well, how does the fire get started? What can we do to prevent such fires where wells are blowing wild? Evidently the principal causes must be known before much progress can be made toward preventing well fires. The problem demands both thought and action by the industry because men's lives as well as vast sums of money are at stake.

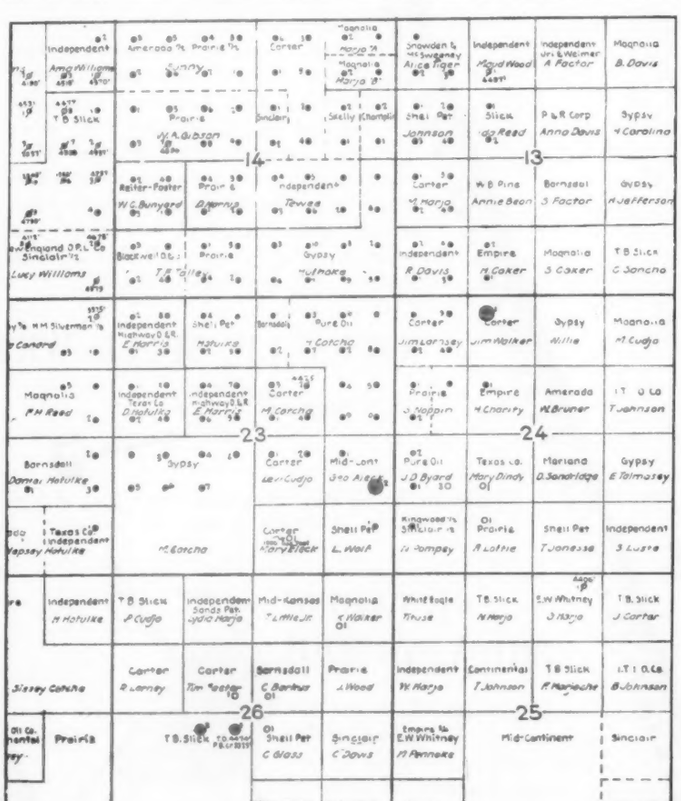

Figure 2—Map showing southerly development of the South Little River Field. The locations of the gas blowouts are indicated by the large circles around two wells, one in Section 24 and the other in Section 23. The two heavily marked wells in Section 26 are the T. B. Slick Oil Co. wells producing gas from the Cromwell sand.

EUGENE HOLMAN MADE ASSISTANT TO SADLER

Eugene Holman, chief geologist of the Humble Oil & Refining Co. at Houston, Tex., has been appointed assistant to E. J. Sadler, vice president and director of

Eugene Holman

the Standard Oil Co. of New Jersey, in charge of foreign operations, and will leave about February to assume his new work in New York.

Mr. Holman has been with the Humble Oil & Refining Co. since 1919, going to work first in the central west Texas fields. From there he was transferred to Shreveport, La., in 1920 as geologist and head of the land department. In 1922 he was promoted to superintendent of the Arkansas and North Louisiana division. In 1926 he was transferred to Houston as chief geologist.

Previous to going with the Humble Oil & Refining Co. he was with The Texas Company in Central America and Mexico for one year in 1918 and then with the United States Geological Survey. He is a native of Texas and was graduated from the University of Texas in 1920. During the war he was in the air service.

WEST TEXAS GEOLOGISTS

SAN ANGELO, Tex., Jan. 12.—An address by John Emery Adams of Colorado, geologist for the California Company, on "The Subsurface Stratigraphy of the Yates Field," and installation of officers recently elected were the principal features of the first meeting of the West Texas Geological Society in 1929, at San Angelo.

New officers are: President, V. E. Cottingham, San Angelo, consulting geologist of Cottingham & Briscoe; vice president, A. L. Ackers, district geologist for the Southern Crude Oil Purchasing Co. at Midland; secretary-treasurer, Stanley Jay, geologist Pure Oil Co., San Angelo.

THREE KILLED BY EXPLOSION

OWENSBORO, Ky. Jan. 12.—Three workers in the Tri-County Field were killed instantly when a boiler exploded on the Mary Cundiff farm, near Taffy, in Ohio County, Kentucky, east of the Ambrose Pool; the lease being operated by James C. Ellis. The dead are: James Alexander, 34, superintendent; Delmar Alexander, 23, pumper; Arnold Newsom, 27, assistant superintendent.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 44)

J. D. Wheeler's No. 1 State Land, 744 ft. S and 1,250 ft. E from SE cor. Sec. 73, Blk. 1, I.&G.N.R.R. Sur., but in Vacancy Strip ..... Cleaning out 337 ft.

CULBERSON COUNTY

Deep Rock Oil Co.'s No. 2 Seay, 200 ft. N and 250 ft. E of CSL Sec. 20, Blk. 59, T.&P. Sur. ..... Set 10-in. casing 1,137 ft.; drlg. 1,320 ft.

Hickey & Stiver's No. 1 C. O. Finley, 660 ft. N and 1,980 ft. W Sec. 20, Blk. 82 ..... Hole full water; small oil show 1,331 ft.; pipe set 1,418 ft.; total depth 1,660 ft.; trying to shut off water.

W. S. Hillyer's No. 1 McGregor, C NW Sec. 14, Blk. 81 ... Drilling 440 ft.

Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down for casing 1,767 ft.

DAWSON COUNTY

Magnolia Petroleum Co.'s No. 1 W. A. Jetter, C Sec. 1, Blk. 34, Twp. 4n ..... Top salt 1,650 ft.; top lime 3,560 ft.; set 10-in. casing 1,815 ft.; drlg. 3,765 ft., hard lime; 1 baller water every 4 hrs. at 3,675 ft.

EL PASO COUNTY

Sillix et al's No. 1 W. D. Malone, Sec. 46, James M. Day Sur. ..... Set 12½-in. casing 1,010 ft.; shut down 1,010 ft.

FISHER COUNTY

Sickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. Sur. ... Shut down 1,820 ft.

Cranfill & Reynolds' No. 1 Brown, 330 ft. S and E of NW cor. Sec. 4, W. E. Richardson Sur. ..... Spudding.

Cranfill & Reynolds' No. 2 Willinkham, 1,980 ft. S and 2,310 ft. W of NE cor. Sec. 207, B.B.B.&C.R.R. Sur... Bldg. rig.

Cranfill & Reynolds' No. 1 Fleming, 1,980 ft. S and 2,310 ft. E of NW cor. Sec. 207, B.B.B.&C.R.R. Sur.. Moving in material.

Donnegan Bros.' No. 1 T. Henry, 330 ft. N and E of SE cor. Sec. 21, George W. Burdett Sur. No. 322, but in Sec. 4, Robert Hibbitt Sur. No. 331 ..... Shut down 1,475 ft.

Hucony Gas Co.'s No. 1 D. F. Maberry, 1,078 ft. S and 188 ft. W of NE cor. Elijah Bell Sur. No. 327 ..... Hole full salt water 2,735 ft.; cleaning out 2,850 ft.

Texas-Phillips' No. 1 Hall, 330 ft. N and W of SE cor. Sec. 6, Blk. 20 ..... Location.

Thompson et al's No. 1 Newman, 1,320 ft. N and 660 ft. W of SE cor. of SW Sec. 44, Blk. 1, H.&T.B. Sur. ... Drlg. 2,034 ft.

GAINES COUNTY

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 ft. S and 330 ft. W of NE cor. Sec. 110, Blk. H, D.&W.R.R. ... Shut down 2,226 ft. for water.

GLASSCOCK COUNTY

Chas. Daniels et al's No. 1 Meek, 2,310 ft. W and 1,60 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 2s, T.&P. Sur.. Spudded and shut down.

Gibson & Johnson's No. 1 Mann, C NW Sec. 6, Blk. 33, T.&P. Sur. ..... Shut down 1,055 ft.

B. R. Penn's No. 1 Hughes-Johnson, C NW Sec. 45, Blk. 30, W.&N.W. Sur. ..... Fishing baller 585 ft.

Marland Prod. Co. et al's No. 7-A Settles, 2,310 ft. S and W of NE cor. Sec. 158, Blk. 29, W.&N.W. Sur. ... Location.

Meriweather Oil Co.'s No. 2 McDowell, 1,492 ft. N and 150 ft. E of SE Sec. 35, Blk. 34, Twp. 2s, T.&P. Sur. .. Drlg. 2,390 ft.

Sprague Oil Co.'s No. 4 Roberts, 1,650 ft. S and 330 ft. E of NW cor. Sec. 156, Blk. 29 ..... Shut down 1,949 ft.

World Oil Co.'s No. 1-C McDowell, 1,650 ft. S and 2,310 ft. W of NE cor. Sec. 21, Blk. 34 ..... Spudding.

White Eagle Oil & Ref. Co.'s No. 1 Dunbar, C of NW Sec. 46, Blk. 34, Twp. 4s, T.&P.R.R. Sur. ..... Drlg. 775 ft.

HOWARD COUNTY

Amerada Pet. Corp. and Rycade Oil Corp.'s No. 2 Dora Roberts, 990 ft. S and 2,240 ft. W of NE cor. Sec. 157, Blk. 29 ..... Fishing 2,479 ft.

Amerada Pet. Corp. and Rycade Oil Corp.'s No. 3 Dora Roberts, 990 ft. S and W of NE cor. Sec. 157, Blk. 29 ..... Shut down 2,922 ft.

Amerada Pet. Corp. and Rycade Oil Corp.'s No. 4 Dora Roberts, 330 ft. N and 2,310 ft. E of SW cor. Sec. 128, Blk. 29, W.&N.W. Sur. ..... Rigging up standard tools 2,950 ft.

Amerada Pet. Corp. and Rycade Oil Corp.'s No. 5 Dora Roberts, 330 ft. N and 2,310 ft. W of SE cor. Sec. 128, Blk. 29 ..... Set 6-in. casing 2,963 ft.

Amerada Pet. Corp. and Rycade Oil Corp.'s No. 6 Dora Roberts, 330 ft. N and 990 ft. W of SE cor. Sec. 128, Blk. 29, W.&N.W. Sur. ..... Set 6-in. casing 2,950 ft.; rigging up standard tools.

California's Co.'s No. 1 Settles, 2,310 ft N and W of SE Sec. 158, Blk. 28, W. & N. W. Sur ..... Drlg. 777 ft.

Cosden & Co.'s No. 2 Dora Roberts-D, 1,650 ft. S and 990 ft. W of NE cor. Sec. 157, Blk. 29, W.&N.W. Sur.. Rigging up standard tools 2,965 ft.

F. H. E. Oil Co. et al's No. 7-B Dora Roberts, 330 ft. S and E of NW Sec. 137, Blk. 29 ..... Fishing 2,600 ft.

F. H. E. Oil Co.'s No. 8-B Dora Roberts, 2,310 ft. S and E of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Shut down 2,931 ft.

F. H. E Oil Co.'s No. 11-B Dora Roberts, 1,700 ft. S and 2,310 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Shut down 250 ft.

F. H. E. Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S. and 1,650 ft. E of NW cor. Sec. 136, Blk. 29 ..... Set 6-in. casing 2,930 ft.; shut down.

Green Oil Co. et al's No. 1 J. W. Furrh, C SW cor. Sec. 11, Blk. 31 ..... Top lime 2,100 ft.; set 6-in. casing 2,865 ft.; 500 ft. sulphur water; drlg. 3,407 ft.; hole full water.

Green et al's No. 1 Slaughter, C SW Sec. 32, Blk. 31, Twp. 3n, T.&P.R.R. Sur. ..... Location.

L. C. Harrison et al's No. 1 G. M. Podge Est., SE cor. Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. ..... Hole full salt water 1,475-1,505 ft.; top lime 1,825 ft.; show oil 2,972-74 ft.; hole full fluid 3,257 ft.; total depth 3,257 ft. ... plugged back to 3,000 ft. to shoot.

Henshaw Oil Corp.'s No. 2-A Settles, 1,884 ft. E and 330 ft. S ond NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur.. Total depth 2,297 ft., cleaning out.

Howard County Oil Corp.'s No. 1 Kloh, 990 ft. S and 1,170 ft. E of NW cor. Sec. 5, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Fishing 1,005 ft.

Laurel & Cosden's No. 8 Dora Roberts, 380 ft. W and 2,310 ft. N of SE cor. Sec. 136, Blk. 29 ..... Rig.

Laurel & Cosden's No. 9 Roberts, 1,650 ft. N and 330 ft. W of SE cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Location.

Magnolia Pet. Co.'s No. 12 Dora Roberts, 1,650 ft. N and 330 ft. S of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur... Total depth 2,561 ft.; preparing to pump.

Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Rigging up standard tools 2,927 ft.; shut down.

Magnolia Pet. Co.'s No. 16-D Dora Roberts, 990 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Rigging up standard tools 2,440 ft.

Marland Prod. Co.'s No. 2-C Chalk, 330 ft. S and 1,650 ft. W of NE cor. Sec. 140, Blk. 29 ..... Drlg. 300 ft.

Marland Oil Co.'s No. 3-C Chalk, 660 ft. S and 2,440 ft. W of NE cor. Sec. 140, Blk. 29, W.&N.W. Sur. ..... Spudding.

Marland-Texon Prod. Co.'s No. 1 Eason, 2,638 ft. S and E of SW cor. Sec. 124, Blk. 29, W.&N.W. Sur..... Cem. 6⅝-in. casing 1,746 ft.
2,513 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ..... Drlg. 2,192 ft.

Marland & Group One Co.'s No. 6-A Settles, 2,665.5 ft. S and 2,513.2 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. ..... Set 8-in. casing 2,125 ft.; rigging up standard tools; top pay 2,220 ft.

Marland Oil Co.'s No. 8-A Settles, 2,310 ft. N and E of SW cor. Sec. 158, Blk. 29, W.&N.W. Sur. ..... Location.

Phillips Pet. Co.'s No. 1 J. Thomas, 330 ft. N and W of SE cor. Sec. 13, Blk. 33, Twp. 1n, T.&P. Sur. ..... Topped lime 3,030 ft.; drlg. 3,670 ft.; hole full sulphur water.

Pure Oil Co.'s No. 9 Chalk, 990 ft. N and W of SE cor. Sec. 125, Blk. 29, W.&N.W. Sur. ..... Drlg. 797 ft.

Shell Pet. Corp.'s No. 1 Settles, 990 ft. E and 330 ft. N of SW cor. Sec. 135, Blk. 29. ..... Drlg. 1,769 ft.

Schermerhorn Oil Co.'s No. 3 Dora Roberts, 1,650 ft. S and 990 ft. W of NE cor. Sec. 137, Blk. 29 ..... Drlg. 2,910 ft.

Schermerhorn Oil Co.'s No. 4 Dora Roberts, 990 ft. S and W of NE cor. Sec. 157, Blk. 29 ..... Drlg. 3,000 ft.

Sun Oil Co.'s No. 6 Settles, 915 ft. N and 330 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W. Sur. ..... Drlg. 620 ft.

Taylor-Link Oil Co.'s No. 2 Kloh-Rumsey, 1,884 ft. E and 150 ft. N of SW cor. Sec. 3, Blk. 32, Twp. 2-S, T.&P.R.R. Sur. ..... Drlg. 880 ft.

Ward Oil Co.'s No. 3 Dora Roberts, 2,310 ft. N and E of SW cor. Sec. 137, Blk. 29 ..... Drlg. 1,212 ft.

Ward Oil Co.'s No. 4 Dora Roberts, 2,310 ft. N and E of SW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 2,980 ft.

Ward Oil Co.'s No. 5 Roberts, 1,650 ft. N and 330 ft. E of SW cor. Sec. 137, Blk. 29 ..... Shut down 1,928 ft.

Witherspoon et al's No. 1 Kloh-Rumsey, 2,970 ft. E and 150 ft. N of SW cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Derrick.

Witherspoon & Glasscock's No. 1 Settles, 300 ft. S and 2,979 ft. W Sec. 6, Blk. 32, T.&P. Sur. ..... Drlg. 1,975 ft.

HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart & Roseborough, C SE Sec. 5, School Blk. 21 ..... Total depth 260 ft.; rebuilding rig.

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 19, Blk. E ..... Total depth 252 ft.; cleaning out.

Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Straightreaming 2,700 ft.; total depth 2,740 ft.; fishing pipe.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ..... Hole full water 2,945 ft.; underreaming 8¼-in. casing at 2,840 ft.; trying to get water shut off; shut down 3,140 ft.; trying to pull casing.

IRION COUNTY

Fuhrman Pet. Co.'s No. 1 J. O. Suggs, lease 1, C SE Sec. 3,024, Blk. 24, H.&T.C. Sur. ..... Rig.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 2, C SW Sec. 3,029, Blk. 24, H.&T.C. Sur. ..... Location.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 3, C SE Sec. 3,009, Blk. 24, H.&T.C. Sur. ..... Moving in material.

Kimbrough & Flinchbaugh's No. 1 Tankersley, 150 ft. S and 200 ft. W of NE cor. Sec. 712, Ford Willig Sur.. Spudding.

Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S, 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land.... Set 6-in. casing 1,360 ft.; show oil and gas; shut down 1,400 ft.

Mertzon Interests' No. 1 Harlan Horney, 2,440 ft. N and 150 ft. from W lines of Sec. Z, Blk. 3, H.&T.C. Sur. .. Rig.

F. E. Webb et al's No. 1 J. M. Nutt ..... Shut down 2,510 ft.

Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. ..... Top pay 3,368 ft.; swabbed 35 bbls. oil and 40 bbls. water 35.8 gravity oil; drlg. 4,790 ft.

C. J. Wrightsman's No. 1 Sawyer, 1,320 ft. from N. and W lines Sec. 3,032, Blk. 24, H.&T.C. Sur. ..... Location.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft. W line Sec. 345, H.&T.C. Sur. ..... Show gas 3,271 ft.; black lime; slight show gas; cleaning out 3,279 ft.; total depth 3,298 ft.

JONES COUNTY

Anna Belle Oil Co.'s No. 1 Bickley, 330 ft. S and E of NW cor. SE NE Sec. 50, Blk. 18, T.&P. Sur. ..... Rig.

W. G. Clark et al's No. 1 J. T. Thomas, 350 ft. S and 103 ft. W of extreme NE cor. Sec. 13, Blk. 19 ..... Shut down 2,587 ft.

E. P. Campbell et al's No. 2-C Herndon, 330 ft. N and E of SW cor. NW Sec. 6, M.E.P.&P. Sur. ..... Drlg. 795 ft.

Cosden & Co.'s No. 1 Brown, 200 ft. N and 300 ft. W of SE cor. J. H. Grayson Sur. ..... Rig.

Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 319 ft. E of SW cor. S half NW Sec. 50, Blk. 18, T.&P. Sur. ..... Rig.

Cosden, Herbert et al's No. 6 Bickley, 330 ft. S and 1,278 ft. W of NE cor. S half NW Sec. 50, Blk. 18, T.&P. Sur. ..... Flowed and swabbed 500 bbls. first 21 hrs. from 2,485-92 ft.

Grisham & Hunter's No. 1 Tiner, 311 ft. N and 330 ft. W of SE cor. Gabriel Zumwalt Sur. ..... Rig.

Mid-Sun Oil Corp.'s No. 1 George Hoehn, 660 ft. N and W of SE cor. SE 40 ac. of N 160 ac. of W 320 ac. of A. Crain Sur. A-152 ..... Drlg. 1,580 ft.

McNeeley et al's No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Subdivision 20, A-164, DeWitt Co. School Land ..... Spudded and shut down.

Phillips Pet. Co.'s No. 1 Campbell, 330 ft. S and E of NW cor. SE 41.5 ac. of S 166 ac. of N 180 ac., 4½ of Sec. 15, Blk. 19, T.&P.R.R. Sur. ..... Drlg. 1,895 ft.

Phillips Pet. Corp.'s No. 5 J. C. Mason, 990 ft. S and 330 ft. W of NE cor. W half NE Sec. 18, Blk. 19, T.&P. Sur. ..... Swabbed 101 bbls. 14 hrs. at 2,495-2,514 ft.

Phillips Pet. Co.'s No. 1 Winters, Sec. 19, Blk. 19, T.&P. Sur. ..... Drlg. 2,395 ft.

Roberts Oil Corp.'s No. 7 Grayson, 1,470 ft. N and 330 ft. W of SE cor. Sec. 13, Blk. 19, T. & P. Sur. ..... Pay 2,503-10 ft. 820 bbls.

Sedwick O. & G. Co.'s No. 1 Routh, 1,250 ft. N, 2,500 ft. W SE cor. 299-ac. tract, Austin & Williams Sur. 355-A-7 ..... Rig.

Sinclair O. & G. Co.'s No. 2 Buckley, 975 ft. S, 320 ft. E of NW cor. N half NE cor. Sec. 50, Blk. 18, T.&P. R.R. Sur. ..... Shot with 25 qts. 2,505-13 ft.; shut down 2,945 ft.

The Texas Company's No. 3 Laura Carter, 330 ft. S and W of NW cor. Carter 173.5-acre tract, Sec. 13 Blk. 19, T.&P. Sur. ..... 50 bbls. 2,487-92 ft.

U. L. Tomberlin's No. 1 Horn, 1,980 ft. N and 600 ft. E of SW cor. of N 502 ac. of Penney Sur. A-283..... Spudded and shut down.

Woods & Williams' No. 1 M. A. Parr, about 500 ft. S and E of NW cor. G. A. Kirkland Sur. A-507 ..... Drlg. 2,470 ft.

LOVING COUNTY

Lockhart & Co.'s No. 1 H. L. Lepp, 330 ft. each way from S cor. of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Cem. 10-in. 578 ft.

LYNN COUNTY

Miller et al's No. 1 May, 500 ft. N of C of S L. of Sec. 10, Blk. 7, E.L.R.R. Sur. ..... Spudded and shut down.

MENARD COUNTY

Carpenter & Robbins' No. 1 Kothman, NW cor. SW SW Sec. 22 ..... Shut down 600 ft.

Sorrels & Jackson's No. 1 F. Wilhelm, C NE Sec. 6, Blk. C, Brooks & Burleson Sur. ..... Drlg. 800 ft.

MIDLAND COUNTY

Shoup et al's No. 1 Roy Parks, C NW Sec. 34, Blk. 41, Twp. 2s, T.&P. Sur. ..... Top salt 1,700 ft.; cem. 8¼-in. casing 2,770 ft.; show oil 3,330 ft.; shut down 4,980 ft.

MITCHELL COUNTY

California Co.'s No. 6 Foster, Lease 1, 990 ft. N and 2,310 ft. E of SW cor. Sec. 6, Blk. 29, Twp. 1s, T.&P. Sur. ..... Drlg. 2,055 ft.

E. P. Campbell et al's No. 1 Pond, 1,065 ft. W, 660 ft. N of SE cor. Sec. 79, Blk. 27, T.&P. Sur. ..... Rerun 12½-in. casing 730 ft.; shut down 2,365 ft.

Magnolia Pet. Co.'s No. 6 Foster, 1,980 ft. N and E of NW cor. Sec. 17, Blk. 29, Twp. 1s, T.&P.R.R. Sur. ... Location.

Simms Pet. Co.'s No. 1 Elwood, C SE of Sec. 29, Blk. 18, S.P.R.R. Sur. ..... Location.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. ..... Fishing tools 3,215 ft.

NOLAN COUNTY

L. G. Bradstreet et al's No. 1 Kuteman, C NW Sec. 95, Blk. X, T.&P. Sur. ..... Rig.

Herbert Oil Co.'s No. 1 Pepper, C N half Sec. 32, Blk. 22, T.&P. Sur. ..... Show gas 3,160 ft.; hole full sulphur water 3,190-3,202 ft.; shut down 3,655 ft.

C. M. Root et al's No. 1 Simpson, 330 ft. S and W of NE cor. SE Sec. 33, Blk. 19, T.&P. Sur. ..... Run 12½-in. casing 525 ft.; drlg. 1,895 ft.

W. E. O & R. Co.'s No. 1 Allyn, 600 ft. E and 1,720 ft. N of SW cor. Sec. 48, Blk. 20, T.&P. Sur. ..... Underreaming 10-in. casing 870 ft.; shut down 2,530 ft.

PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.S.Ry. Sur. ..... Top salt 814 ft.; top lime 1,602 ft.; 3,400,000 ft. gas from 1,611-26 ft.; spraying very little oil; sulphur water 1,652 ft.; shut down 1,655 ft.

George Anderson's No. 1 University, C Sec. 11, Blk. 17. ... Top salt 1,030 ft.; total depth 1,964 ft.; 7,000,000 ft. gas making 20 bbls. b.s. and water 24 hrs.

M. H. Black's No. 1 P.V.O. Co., 2,310 ft. from SE and 1,650 ft. from SW lines Sec. 22, Blk. 10, H.&G.N. Sur. .. Location.

California Co.'s No. 1 Smith, Lease 4, 1,010 ft. from N and E line Sec. 15, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 860 ft.

M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H.&G. W. Sur., elev. 2,555 ft. ..... Top lime 1,305 ft.; set 6-in. casing 1,610 ft.; shut down 2,004 ft.

Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A-16,387 ..... Shut down 660 ft.

Doran & McGee's No. 1 P.V.O. Co., 150 ft. from SE and SW lines Sec. 22, Blk. 10, H.&G.N. Sur. ..... Location.

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. ..... Shut down 1,010 ft.

McCarty Oil Co.'s No. 1 A. A. Gray, 1,520 ft. from S and 150 ft. from W lines Sec. 591, Abst. 3,010 ..... Moving in material.

Mid-Kansas Oil & Gas Co.'s No. 12-C Yates, 811 ft. from N and 871 ft. from W lines Sec. 60, Blk. I, L&G.N. R.R. Sur. ..... Drlg. 725 ft.

Mid-Kansas O. & G. Co.'s No. 27-B Yates, 250 ft. N and 845 ft. E from NW cor. Sec. 60, Blk. I, L&G.N.R.R. Sur. ..... Drlg. 1,105 ft.

Phillips Pet. Co.'s No. 1 J. L. Nutt, 2,310 ft. from W and 330 ft. from S lines Sec. 9, Blk. 125,T.&St. L. Sur. .... Drlg. 805 ft.

Stein & McGee's No. 1 Louis Paterson, 150 ft. SE of NW line, 150 ft. NE of SW Sec. 34, Blk. 10, H.&G.N. .... Location.

B. J. Spikes' No. 1 George Brown ..... Shut down 700 ft.

Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line Sec. 1, Blk. 117, G.C.&F.F. ..... Shut down 492 ft.

Southern C. O. P. Co.'s No. 1 Scharbauer Cattle Co., SW cor. Sec. 21, Blk. 134, T.&S.L. Sur. ..... Show gas 1,455-60 ft.; water 3,175 ft.; fishing 3,380 ft.

Talbot & Ditman's No. 1 Unsicker, 1,320 ft. from E and 660 ft. from S lines, Sec. 25, Blk. 10, H.&G.N. .... Fishing 708 ft.

Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; fishing 4,130 ft.

Trees Oil Co.'s No. 1 Trees, 330 ft. from N and E L of Sec. 63, Blk. 8 ..... Location.

World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 8, T.P.R.R. Sur., elev. 2,810 ft. ..... Shut down 3,105 ft.; expect to start up right away.

PRESIDIO COUNTY

Eastland Oil Co.'s No. 1 Smith, C Sec. 17, Certificate 463, or Blk. 351, G.C.&S.F.R.R. ..... Spudded and shut down.

Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Show wet gas 1,270 ft.; drlg. 1,478 ft.

L. C. Brite's No. 1 Lee, Sec. 50, Blk. 12, G.H.&S.A. Sur., center of section ..... Shut down 4,152 ft.; show oil 4,130 ft.; set 6-in. casing 4,152 ft.; drlg. 4,170 ft.

REAGAN COUNTY

The California Co.'s No. 5 University, 2,310 ft. from N and E lines Sec. 16, Blk. 7, University Land ..... Spudding.

Texon O. & L. Co.'s No. 1-B University Group 1 ..... Top pay 6,250 ft.; hole full of oil; well made two small heads; oil sand 8,482 ft.; total depth 8,525 ft.; flowing 1,450 bbls. oil, 13,000,000 ft. gas daily.

REEVES COUNTY

D. P. Davis et al's No. 1 H. C. McCart, 300 ft. S and 200 ft. W of NE cor. S half NW Sec. 26, Blk. C-18 ..... Shut down 25 ft.

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Total depth 2,900 ft.; shut down.

Dr. Kitsis et al's No. 1 Kloh & Rumsey, 330 ft. N and W of SE cor. Sec. 5, Blk. 54, Twp. 5, T.&P. Sur. ..... Set 8-in. casing 1,010 ft.; straight-reaming 1,107 ft.

David R. Thompson's No. 1 A. A. Eddins ..... Swedging casing 5,658 ft.; pulling 5-in. casing.

Robert Penn et al's No. 1 Bowles, 2,310 ft. SW of NE cor. Sec. 36, Blk. 50, Twp. 8, T.&P.R.R. Sur. ..... Shut down 118 ft. for water.

Lee O. White et al's No. 1 Kloh-Rumsey, 660 ft. S and E of NW cor. Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .... Bldg. rig.

RUNNELS COUNTY

Boyce et al's No. 1 E. O. Lange, 2,300 ft. S and 6,900 ft. W of NE cor. Austin & Williams Sur. No. 262. ..... Drlg. 800 ft.

Foster et al's No. 1 Currie, 1,866 ft. SE of NW line, 335 ft. SW of NE L. Gray Carroll Sur. ..... Moving in material.

R. D. Hamilton et al's No. 1 A. Spill, 1,320 ft. S and W of NE cor. A. Spill 891 acres, out of Thomas R. Webb Sur. 358 ..... Shut down 100 ft.

McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. ..... Shut down 1,185 ft.

Nourse & Tilton's No. 1 R. A. Stokes, 200 ft. S, 600 ft. E of NW cor. G.C.&S.F. Sur. No. 2 ..... Drlg. 2,285 ft.

R. B. Summers et al's No. 1 J. W. Reese, M. J. Parramore Sur. 26 ..... Shut down 1,650 ft.

Union Oil Co. of Nevada's No. 1 W. E. Allen, 1,000 ft. N and W of SE cor. Sec. 1, H.E.&W.T. Sur. ..... Drlg. 2,110 ft.

Vacuum Oil Co.'s No. 1 Brevard, 2,150 ft. N and 302 ft. E of SW cor. Lot 21, D. Diaz Sur. No. 532. ..... Drlg. 2,359 ft.

SCHLEICHER COUNTY

J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur. ..... Shut down 275 ft.

SCURRY COUNTY

I. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down.

G. E. Dieckman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Drlg. 1,260 ft.

STERLING COUNTY

F. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. Sur. ..... Show oil 1,296-98 ft. and 1,356-58 ft.; underreaming 1,714 ft.

STONEWALL COUNTY

Sun Oil Co.'s No. 1 Reynor, 346 ft. S and W NE cor. Sec. 20, Blk. B, H.&T.C. ..... Drlg. 3,565 ft.

SUTTON COUNTY

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NB cor. Sec. 25, C.C.S.D.&N.G.R.R. Sur. .... Drlg. by tools 5,770 ft.

Southern C. O. P. Co.'s No. 1 Allison, 2,310 ft. S and 330 ft. W of NE Sec. 44, Blk. K, G.H.&S.A. Sur. ..... Drlg. 500 ft.

TAYLOR COUNTY

Burnham et al's No. 1 A.M.Y.X. ..... Drlg. 1,880 ft.

Grisham-Hunter Corp.'s No. 1 Campbell, 330 ft. S and E of NW cor. SW Sec. 65, Blk. 19, T.&P. Sur. ..... Rig.

Hurley Oil Co.'s No. 1 Mrs. A. R. Payne, 330 ft. N and E of SW cor. E 80 acres of NW Sec. 52, Blk. 19. .... Hole full water 2,145-62 ft.; dry at 3,038 ft.

Mid-Continent Oil & Gas Co.'s No. 1 Taylor, 990 ft. W 215 ft. N SE cor. 100-ac. tract, Sec. 18, Guadalupe School Land Sur. ..... Drlg. 1,950 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Spudded and shut down.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ..... Shut down 1,749 ft.

Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.&R.R. Sur. ..... Location.

Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 6⅝-in. casing 3,986 ft.; 4,475 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 150 ft.

TERRY COUNTY

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Shut down 4,975 ft.

TOM GREEN COUNTY

Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. .... Shut down 1,800 ft.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer. ..... Shut down 1,920 ft.

F. P. Green et al's No. 1 fee, 575 ft. from N and 1,450 ft. from W lines Sec. 185, District 11, S.P.R.R. Co. Sur. ..... Set 8-in. casing 1,810 ft.

McLaughlin & Ridge's No. 1 R. Q. Holder, 3,140 ft. N and 80 ft.W SE cor. J. P. Parker Sur. (3,000-ft. test) ..... Show gas 1,757-59 ft.; shut down 3,005 ft.; hole full water 2,[illegible] ft.

UPTON COUNTY

Champlin Oil & Ref. Co.'s No. 4 J. F. Lane, 990 ft. from S, 330 ft. from W line of SE Sec. 2, G.C.&S.F. Sur. .... Top pay 1,940 ft.; pumping [illegible] bbls. oil and 470 bbls. wa[illegible] shut down 1,979 ft.

Humble Oil & Ref. Co.'s No. 10 Ricker, 2,310 ft. from NE line and 3,280 ft. from NW line, Sec. 5, Mary Denton Sur. ..... Drlg. 1,600 ft.

YOAKUM COUNTY

Weekley Oil Corp.'s No. 1 Knight, C NW Sec. 791, Blk. D, John Gibson Sur. ..... Rigging cable tools.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,600 ft. (corrected.

O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft., [illegible] 125,750 ft. gas; reset 8-in. [illegible] ft.; shut down 4,210 ft.

Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 1,573 ft.

Dyar Bros. et al's No. 1 Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P. Sur., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. Sur. ..... Show oil and gas 1,053 ft.; [illegible] down 2,605 ft.

Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y. .... Set 15½-in. casing 767 ft.; set [illegible] in. casing 1,510 ft.; shut [illegible] 1,636 ft.

WARD COUNTY

E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162 Blk. 34, H.&T.C.R.R. ..... Spudding and shut down.

Prairie O. & G. Co.'s No. 1 Sealy Est. 1,320 ft. S and W Sec. 95, Blk. A, G.M.M.B.&A. Sur. ..... Top salt 1,073 ft.; 5,000,000 ft. [illegible] 2,526 ft.; gas decreased to [illegible] 000,000 ft. at 2,637 ft.; hole [illegible] sulphur water 3,450 ft.; 5,000,[illegible] ft. gas 2,526 ft.; shut down [illegible] 505 ft.; trying to complete [illegible] gasser; plugged back to 2,531 [illegible]

Rector Oil Co.'s No. 1 Johnson, 1,150 ft. NW, 5,160 ft. NE Sec. 10, Blk. 32, H.&T.C. ..... Top salt 745 ft.; 2,000 ft. [illegible] water in hole 133-35 [illegible] straightreaming and cleaning out 2,490 ft.; total depth 2,[illegible] ft.

Shipley et al's No. 1 Hazlett, 2,310 ft. NE and 2,310 ft. SE Sec. 17, Blk. 5, H.&T.C. ..... Top salt 727 ft.; sand pay 2,6[illegible] 81 ft.; averaged 115 to 120 bbls. daily.

Talbot, Dittman & Atlantic O. P. Co.'s No. 1 Dorr, 1,320 ft. from SE line and 660 ft. from SW line of Sec. 9, Blk. 5, H.&T.C.R.R. Sur. ..... 3 bbls. water per hr. 910 ft.; [illegible] 10-in. casing 770 ft.; drlg. 1,[illegible] ft., sandy lime and anhydrite.

WINKLER COUNTY

Amerada Pet. Corp.'s No. 2 Daugherty, SW cor. SE Sec. 3, Blk. 74 ..... Cem. 6-in. casing 2,657 ft.; corin[illegible] 3,090 ft.; est. 65,000,000 ft. ga[illegible] fishing 3,110 ft.

Amerada Pet. Corp.'s No. 3 Daugherty, NW cor. NE SE Sec. 3, Blk. 74 ..... Top lime 2,812 ft.; running 8¼-[illegible] casing 2,824 ft.

Atlantic Prod. Co.'s No. 4 Hendricks, SW W half NE Sec. 44, Blk. 26 ..... Location.

V. T. Bolin et al's No. 2 Brown, 2,000 ft. S and W of NE cor. Sec. 4, Blk. B-5, Public School Land. ..... Shut down 210 ft. water.

Barnsdall Oil Corp.'s No. 1 Tobe Morton, 330 ft. N and E of SW cor. Sec. 26, Blk. B-12 ..... Oil show 3,070 ft.; shut down 3,128 ft.

Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12. ..... Set 12½-in. casing 547 ft.; shut down 1,094 ft.

Barnsdall Oil Corp.'s No. 3 Tobe Morton, 990 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12. ..... Cellar.

Empire Gas & Fuel Co.'s No. 2 Daugherty, 330 ft. N and 2,310 ft. E of SW Sec. 3, Blk. 74. ..... Top lime 2,690 ft.; coring 1,[illegible] ft.; 15,000,000 ft. gas 3,090 ft.; top pay 3,045 ft.; rigging [illegible] standard tools at 3,150 ft.; [illegible] 66 bbls. daily, 10,000,000 ft. ga[illegible]

Empire Gas & Fuel Co.'s No. 3 Daugherty, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. 74. ..... Top lime 2,774 ft.; cem. 8-in. cas[illegible] ing 2,781 ft.; drlg. 2,950 ft.

Empire Gas & Fuel Co.'s No. 1-B Daugherty, 2,310 ft. S and 990 ft. W of NE cor. Sec. 3, Blk. 74. ..... Top lime 2,823 ft.; drlg. 3,160 ft.

Gulf Prod. Co.'s No. 3 Cowden, 1,310 ft. N, 330 ft. E of SW of their 240-ac. tract, Sec. 3, Blk. B-12. ..... Drlg. 425 ft.

Gulf Prod. Co.'s No. 2 Hendricks, 1,330 ft. N and 330 ft. W of SE cor. NW Sec. 44, Blk. 26, School Land. .. Rigging up.

Gulf Prod. Co.'s No. 2 O'Brien, NW cor. Sec. 31, Blk. F. .. Cem. 8¼-in. casing 2,072 ft.; top [illegible] lime 2,723 ft.; cem. 6-in. casing 2,798 ft.; drlg. 2,808 ft.

Gulf Prod. Co.'s No. 3 O'Brien, Sec. 31, Blk. F. ..... Set 10-in. casing 2,150 ft.; top lime 2,700 ft.; drlg. 2,940 ft.

Humble Oil & Ref. Co.'s No. 3 Hendricks-C Lease No. 2, 1,320 ft. S and 330 ft. E of NW cor. Sec. 10, Blk. B-12 ..... Drlg. 2,220 ft.

Independent O. & G. Co.'s No. 3 McCabe, 990 ft. S and 2,310 ft. W of NE cor. Sec. 36, Blk. B-5, School Land. . Top salt 950 ft.; top lime 2,[illegible] ft.; oil show 2,515 ft.; 1,000 f[illegible] oil in hole; total depth 3,249 ft.; plugged back 3,214 ft.; prepar[illegible] ing to shoot.

Independent Oil & Gas Co.'s No. 3-B Hendricks, NW W half SE Sec. 44, Blk. 26 ..... Moving in material.

Magnouia Pet. Co.'s No. 1 Scarborough, 2,310 ft. S and 990 ft. E Sec. 1, Blk. C-22 ..... Top salt 1,122 ft., gas show 2,84[illegible] 45 ft.; 1,500 ft. oil in hole flowing 10 bbls. hr.; total depth 3,030 ft.

Marland Oil Co.'s No. 1 Tobe Morton, SE cor. Sec. 27, Blk. B-12 ..... Cem. 12½-in. casing 492 ft.; top lime 2,652 ft.; cem. 8¼-in. casing 2,656 ft.; oil show 2,780 ft., fishing 2,830 ft.; 1,000 ft. oil in hole.

Marland Oil Co.'s No. 2 Tobe Morton, 990 ft. N and 330 ft. W of SE cor. Sec. 27, Blk. B-12 ..... Set 12½-in. casing 405 ft.; drlg. 1,350 ft.

Morris & Henshaw's No. 1-B Hendricks, 1,650 ft. N and 990 ft. E of SW cor. Sec. 28, Blk. B-5, School Land. .. Rigging up standard tools.

Prairie Oil & Gas Co.'s No. 5 Cowdan, 1,320 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. B-12, School Land. .. Drlg. 750 ft.

Prairie O. & G. Co.'s No. 1 Leck, 330 ft. S and 2,310 ft. E of NW cor. Sec. 16, Blk. 74. ..... Cem. 12½-in. casing 240 ft.; drlg. 2,700 ft.; cem. 8-in. casing 2,[illegible] ft.

Prairie O. & G. Co.'s No. 2 Leck, 330 ft. S and 2,310 ft. W of NE cor. Sec. 16, Blk. 74. ..... Rig.

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Prairie O. & G. Co.'s No. 1 Tobe Morton, 330 ft. N and 1,650 ft. W of SW cor. Sec. 27, Blk. B-12 ..... Cem. 12½-in. casing 500 ft.; cem. 8¼-in. casing 2,770 ft.; top lime 2,815 ft.; jarring on tools 3,025 ft.

Pure Oil Co.'s No. 1 Hendricks, NE SW Sec. 44, Blk. 26.. Rigging up rotary.

Shell Pet. Co.'s No. 1 Daugherty, 2,810 ft. S and W of NE cor. Sec. 3, Blk. 74 ..... Cem. 12½-in. casing 528 ft.; top lime 2,684 ft.; set 9⅝-in. casing 2,689 ft.; coring 3,104 ft.

Shell Pet. Co. et al's No. 2 Lum Daugherty, 2,310 ft. S and 1,650 ft. W of NE Sec. 3, Blk. 74 ..... Top lime 2,742 ft.; total depth 3,208 ft.; est. 5,000 bbls. daily salt water.

Simms Oil Co. and Southwest O. P. Co.'s No. 1 George Sealey 2,434 ft. S and 330 ft. W of NE cor. Sec. 50, Blk. F ..... Top lime 2,676 ft.; total depth 2,679 ft.

Southern C. O. P. Co. and Westbrook Thompson's No. 4 Hendricks T-88-B, 330 ft. S and 1,330 ft. E NW cor. Sec. 4, Blk. B-12, Public School Land ..... Top lime 2,721 ft.; drlg. 2,728 ft.

Southern C. O. P Co.'s No. 3 Hendricks T-88-D, 1,320 ft. N and W of SE cor. Blk. B-12, Public School Land ..... Top lime 2,558 ft.; drlg. 2,808 ft.; top pay 2,730 ft.

Southern C. O. P. Co. and Westbrook-Thompson's No. 3 Hendricks T-89-C, 2,310 ft. N and W of SE cor. Sec. 35, Blk. B-5. ..... Cem. 8¼-in. casing 2,290 ft.; rigging up standard tools; drlg. 2,477 ft.

Southern Crude O. P. Co.'s Hendricks T-89-V, 1,320 ft. S and 330 ft. W of NE cor. Sec. 9, Blk. B-12, School Land ..... Location.

Texas Canadian Oil Co.'s No. 1 Kloh-Rumsey, 1,320 ft. N and E of SW cor. Sec. 35, Blk. 46, T.&P.R.R. Sur.. Moving in material.

Warner-Quinlan Co.'s No. 1 Daugherty, 2,310 ft. S and E of NW cor. Sec. 3, Blk. 74, Public School Land ..... Cem. 8¼-in. casing 2,671 ft.; drlg. 2,825 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 43)

DONLEY COUNTY

Beaudoin et als' No. 1 Ball, 1,075 ft. from N line and 986 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur. ..... Location.

GRAY COUNTY

B. S. Arnold's No. 1 J. E. Mingale, C E 160 ac., Sec. 212, Blk. B-2, H.&G.N. Sur. ..... S.D. 1,412 ft.

Arnold & Howell's No. 1 Turnex, C SW, Sec. 111, Blk. B-2 ..... S.D. 2,224 ft. for pipe.

Camel Oil Co.'s No. 1 Harrah-B, 330 ft. each way from NW cor. NE, Sec. 150, Blk. 3, I.&G.N. Sur. ..... Cellar.

Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur. ..... S.O. 2,400 ft; S.D. 2,735 ft.

Constantine et als' No. 1 Dial, 330 ft. S and E of NW cor. W½ NW, Sec. 32, Blk. 25, H.&G.N. Sur. ..... Rig.

Danciger et als' No. 1 Shaw, 1,000 ft. N and 330 ft. W SE cor. SW, Sec. 5, Blk. 1, A.C.H.&B. Sur. ..... 35,000,000 ft. gas 2,290 ft; show oil 2,610-13 ft; S.D. 2,645 ft.

Danciger et als' No. 1 J. E. Williams, 330 ft. each way from NE cor. NW SW, Sec. 6, Blk. 1, A.C.H.&B. Sur.. Spud.

Danciger et als' No. 1 Sheridan, SE cor. Sec. 184, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

Delmar Oil Co.'s No. 1 F. Foster, NW cor. SW, Sec. 55, Blk. B-2, H.&G.N. Sur. ..... S.O.; 4,000,000 ft. gas 2,835-97 ft; T.D. 3,757 ft; to plug back to 2,950 ft. and shoot.

Delmar Oil Co.'s No. 1 Chapman, 330 ft. each way from SE cor. NW, Sec. 10, Blk. 26, H.&G.N. Sur. ..... Drlg. 1,825 ft.

Empire G. & F. Co.'s No. 1 A. R. Clay, NE cor. Sec. 185, Blk. B-2 ..... Drlg. 575 ft.

Eslick & McKinney's No. 1 Mrs. Hopkins, 330 ft. from NE, E½ NE, Sec. 84, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,170 ft.

Sines & Reiger's, formerly Eslick et als' No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ..... Pull 6-in. csg. 3,206 ft.

Gulf Prod. Co.'s No. 6 J. B. Bowers-A, 330 ft. S and E NW cor. W½, Sec. 89, Blk. B-2, H.&G.N. Sur. ..... Swbd. 960 bbls. 22 hrs. at 3,055 ft.

Gulf Prod. Co.'s No. 4 Holmes-A, 990 ft. N and 330 ft. E of SW cor. W½ SE, Sec. 87, Blk. 3, I.&G.N. R.R. Sur. ..... Drlg. 2,492 ft.

Gardner, Collins et als' No. 1 Saunders, 330 ft. each way from NE cor. of S 49 ac. of W 100 ac., Sec. 3, B.&B. Sur. ..... Cmtd. 8-in. 2,526 ft.

Magnolia Pet. Co.'s No. 3 W. Harrah, 330 ft. from NE cor. NW, Sec. 150, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,425 ft.

Magnolia Pet. Co.'s No. 1 Gething, 530 ft. each way from SE SW, Sec. 14, Blk. A-9, H.&G.N. Sur. ..... Drlg. 450 ft.

Magnolia Pet. Co.'s No. 1 Saunders, 330 ft. from SE W½ NW, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Shot with 40 and 70 qts. 2,655-2,716 ft; 860 qts. at 2,807-20 ft; flowing 164 bbls.

Malone et als' No. 1 Taylor, 990 ft. S and E of NW cor. NW, Sec. 22, Blk. B-2, H.&G.N. Sur. ..... Drlg. 250 ft.

Marland Prod. Co.'s No. 1 Brown-Finley, 330 ft. S and W of NE cor. Sec. 32, Blk. B-2, H.&G.N.R.R. Sur. Drlg. 275 ft.

McElroy Oil Co.'s No. 2 Bruce Bull, 155 ft. from N line and 240 ft. from W line of E 87.3 ac. of Sec. 3, Blk. B-2, H.&G.N.R.R. Sur. ..... S.D. 2,564 ft.

McLain Oil Co.'s No. 1 Back, 1,000 ft. from W line and 330 ft. from N line NW, Sec. 24, Blk. 25, H.&G.N. Sur. ..... Rig.

Parton & Holt's No. 1 Gething, 330 ft. each way from SE cor. NE, Sec. 14, Blk. A-9 ..... Cmtd. 6-in. 2,632 ft.

Phillips Pet. Co.'s No. 4 Johns, 330 ft. each way from NE cor. SE SW, Sec. 87, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,375 ft.

Phillips Pet. Co.'s No. 5 Johns, 330 ft. N and 990 ft. E of SW cor. SW, Sec. 87, Blk. 3, I.&G.N. Sur. ..... Rig on ground.

Phillips Pet. Co.'s No. 1 Bob Olsen, NW cor. S½, Sec. 64, Blk. B-2 ..... T.D. 3,239 ft; plugged back to 3,230 ft; shot with 440 qts. at 3,119-3,222 ft; 600 ft. oil and 60 ft. wtr. in hole; drlg. 3,890 ft.

Plains Drlg. Co.'s No. 2 Saunders, 990 ft. from S line and 330 ft. from E line of E½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Skidded 60 ft. N; S.D. 2,265 ft.

Pure Oil Co.'s No. 8 Davis, 330 ft. from NW NE, Sec. 86, Blk. 3, I.&G.N.R.R. Sur. ..... Show oil lime 3,036 ft; T.D. 3,254 ft. swbd. 125 bbls; T.D. 3,281 ft.

Prairie O. & G. Co.'s No. 2 Reynolds, 330 ft. each way from NW cor. SE, Sec. 61, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,965 ft.

Purple Sage Oil Co.'s No. 2 E. B. Johnson ..... 2,000,000 ft. gas; 200 ft. oil 2,870 ft; shot with 510 qts. 2,775-2,872 ft; 400 ft. oil; C.O. 2,875 ft.

Republic Prod. Co.'s No. 1 G. H. Saunders, 330 ft. each way from SW cor. E½ NW cor. Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Fish. 2,625 ft.

Schwald et als' No. 1 fee, 330 ft. each way from NE cor. E½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... Cmtd. 6-in. 2,380 ft.

Skelly Oil Co.'s No. 1 Saunders, 330 ft. from E line, 990 ft. from S line, SW, Sec. 4, Blk. 1, A.C.H.&B. Sur. .. Drlg. 2,475 ft.

Skelly Oil Co.'s No. 3 Saunders, 330 ft. from N line and 990 ft. from W line, SW cor. Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Fish. 2,599 ft.

Skelly Oil Co.'s No. 4 Saunders, 330 ft. from N line and 990 ft. from E line, SW cor. Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Stdznd. 2,588 ft.

St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ..... S.D. 2,150 ft.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.

Southern Pet. Exp. Co.'s No. 2 McConnell, 990 ft. from W line and 330 ft. from S line NW, Sec. 174, Blk. 3, I.&G.N. Sur. ..... Drlg. 900 ft.

The Texas Co.'s No. 5 A. Chapman, 1,138 ft. from W and 330 ft. from S lines, SE, Sec. 51, Blk. 25, H. &G.N. Sur. ..... Bldg. rig.

The Texas Co.'s No. 4 H. M. Davis, SE cor. NW, Sec. 86, Blk. 3, I.&G.N. Sur. ..... C.O. 3,240 ft.

The Texas Co.'s No. 5 Davis, 330 ft. S and W of NE cor. NW, Sec. 86, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,335 ft.

The Texas Co.'s No. 8 Saunders, 895 ft. N and 2,060 ft. E of SW cor. Sec. 3, B.&B. Sur. ..... Drlg. 2,570 ft.

The Texas Co.'s No. 9 Saunders, 330 ft. S and 3,016 ft. E of NW cor. Sec. 1, Eustis Sur. ..... Fish. 2,460 ft.

The Texas Co.'s No. 7 Saunders, 990 ft. from S line and 330 ft. from W line W½ SE cor. Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 2,785 ft.

Travis et als' No. 1 J. S. Morse, SE NW SW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... 30,000,000 ft. gas 2,592-2,610 ft; light spray oil 2,740-45 ft; to deepen.

Wilcox-Pampa Oil Co.'s No. 30 Wooley & Reynolds, NW SE NW, Sec. 61, Blk. 3 ..... Flows 147 bbls. from G.W. at 3,038-3,100 ft.

United Eight O. & T. Co.'s No. 1 E. B. Clay, SE cor. W½ SW, Sec. 177, Blk. B-2 ..... Swabs 7⅛ bbls. per hr. 3,251 ft; placing lead plug to shut off wtr. and putting on gas lift.

Wilcox-Pampa Oil Co.'s No. 31 Worley Reynolds, 330 ft. N and E SW cor. SE SW, Sec. 61, Blk. 3, I.&G.N. S.D. 2,330 ft.

HALL COUNTY

Rio Bravo Oil Co.'s No. 1 Hughes est., 950 ft. from N line, 160 ft. from E line, Sec. 39, Blk. H, I. A. Stephens Sur. ..... Set 6-in. 3,500 ft; S.D. 4,250 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County school lands; elevation 3,363 ft.; contract depth 5,000 ft. ..... S.D. 1,455 ft.

HARTLEY COUNTY

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk. 21 ..... 15,000,000 ft. gas 3,300-35 ft; T.D. 3,601 ft; to deepen.

Canadian River Gas Co.'s No. 10 Burns-A, 660 ft. N. and 660 ft. E. Sec. 18, Blk. 2, G.&M. Sur. ..... Bldg. rig.

HUTCHINSON COUNTY

Antelope Creek Oil Co.'s No. 3 Sanford, 330 ft. from N line and 330 ft. from W line of E½ S 160 ac. of Sec. 82, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,415 ft.

Dunnigan et als' No. 1 C. W. Hugenbyhl, 330 ft. from S line and 33 0ft. from E line, N½, Sec. 4, Blk. T. W.N.G.R.R. Sur. ..... S.D. 850 ft.

Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford B, Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D. 3,039 ft.

Phillips Pet. Co.'s No. 4 Johnson Bros.-Florence, 330 ft. N and E of SW cor. E½, Mary Whitely Sur. .... Spud.

Phillips Pet. Co.'s No. 3 Johnson-Pulaski, 330 ft. N and W of SE cor. W½, Mary Whitely Sur. ..... Drlg. 960 ft.

Phillips Pet. Co.'s No. 5 Johnson-Barnum, 990 ft. N and 330 ft. W SE cor. E 80 ac. of S 160 ac. of N 400 ac., Sec. 64, Blk. 46, H.&T.C.R.R. Sur. ..... Rig.

Phillips Pet. Co.'s No. 1 Sanford-Garford, 330 ft. N and E of SW cor. N 40 ac. of E 80 ac. of S 160 ac. of S 320 ac., Sec. 77, Blk. 46, H.&T.C.R.R. Sur.. Fish. 2,920 ft.

Phillips Pet. Co.'s No. 3 Sanford-Garland, 330 ft. N and E of SW cor. Sec. 77, Blk. 46, H.&T.C. Sur. ..... Rig.

Phillips Pet. Co.'s No. 15 Whittenburg, Sec. 63, Blk. 46, H.&T.C. Sur. ..... Rig.

Phillips Pet. Co.'s No. 16 Whittenburg, Sec. 63, Blk. 46, H.&T.C. Sur. ..... Rig.

Timms et als' No. 2 Garner, 990 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. ..... Run 6-in. 3,050-92 ft; I.P. 80 bbls.

Timms et als' No. 1 Moore, 330 ft. N and E of SW cor. S 40 ac. of NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. Rig.

Wendell et als' No. 1 Johnson Bros., Sec. 1, Blk. X03 .. Set 10-in. csg. 2,035 ft; S.D.

KING COUNTY

The Texas Co.'s No. 1 J. H. Johnson ..... S.D. 4,300 ft.

LAMB COUNTY

Dan Freel et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T. T. A. Thompson Sur. ..... Spudded and S.D.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T. Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.D. 2,400 ft.

Ruby Oil Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,433 ft. for 5-in. csg.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles ranch ..... Small show oil 1,133-40 ft; sand; S.D. 4,000 ft.

MOORE COUNTY

Barnsdall Oil Corp.'s No. 1 L. R. Hagy, NW cor. of Thomas Ross Sur. ..... 20,000,000 ft. gas 3,205 ft; T.D. 3,234 ft; 900 ft. oil 3,226-34 ft; swbd. twice in one day and made 52 bbls; swbng. 15 bbls; drlg. 3,252 ft.

Canadian Gas Co.'s No. 1 Kilgore-A, 2,716 ft. S and 2,695 ft. W of NE cor. Sec. 1, Eustis Sur. ..... Rig.

Devonian Oil Co.'s No. 1 J. T. Sneed, Jr., 2,235 ft. from E and 330 ft. from S lines, S 160 ac., N 320 ac., of Matilda Robinson Sur. ..... Fish. 2,980 ft.

Dixie Creek Oil Co.'s No. 1-A Sneed, Jr., 330 ft. N and W of SE cor. E½, Sec. 65, Blk. 3, G.M. Sur. ..... T.D. 3,197 ft; S.D.

Dixie Creek Oil Co.'s No. 4-A Sneed, Jr., 330 ft. S and W of NE cor. E½, Sec. 65, Blk. 3 ..... 10,000,000 ft. gas 2,835-55 ft; 50 ft. oil 3,304-05 ft; reaming to 3,305 ft.

Fritch O. & G. Co.'s No. 1 Lee Burns, C NE 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ..... Spudded and S.D.

Phillips Pet. Co.'s No. 1 Burnett, 330 ft. each way from NE cor. NE, Sec. 192, Blk. 3-T, T.&N.O. Sur. Drlg. 450 ft.

Phillips Pet. Co.'s No. 3 Sneed (James), 600 ft. S and 300 ft. W of NW cor. J. W. Proctor Sur., but in Matilda Robinson Sur. ..... 1,500 ft. oil 3,110-25 ft.

MOTLEY COUNTY

Explth. Co.'s No. 1 Tillson ..... Drlg. 1,010 ft.

Explth. Co.'s No. 2 Matador Land & Cattle Co., C SW, Sec. 37, John Gibson Sur. ..... U.R. 6-in. csg. 4,700 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ..... Formerly abd. at 5,240 ft; small show 36 gravity oil 5,288-91 ft; show oil brown sand 5,710-12 ft; fish. 5,820 ft.

WHEELER COUNTY

Angus et als' No. 2 Morgan, C E½ NW NE, Sec. 93, Blk. 17, H.&G.N. Sur. ..... S.D. 1,175 ft. for pipe.

Arnold Oil Co. et als' No. 1 Ritchey, 420 ft. from E and 460 ft. from S lines of NW cor. Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.

Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... S.D. 2,800 ft.

Fain McGaha and Humble's No. 1 Noel, 330 ft. each way from NE cor. S½ SE, Sec. 54, Blk. 24, H.& G.N. Sur. ..... Spud.

Hartell et als' No. 1 Burchman, C NW SE, Sec. 91, Blk. 17, H.&G.N. Sur. ..... Drlg. 1,250 ft.

Johnson & Co.'s No. 1 Purcell, 430 ft. from N line and 570 ft. from W line NE, Sec. 50, Blk. 17, H.&G.N. Sur. Drlg. 920 ft.

Lone Star Co.'s No. 1 Hicks, C SW NE, Sec. 52, Blk. 17, H.&G.N. Sur. ..... Rig.

Lone Star Gas Co.'s No. 3 Jones, C NW NE, Sec. 1, Blk. 25, H.&G.N. Sur. ..... Rig.

Lone Star Co.'s No. 1 Shelton, C NE SE, Sec. 22, Blk. 24, H.&G.N. Sur. ..... Fish. 620 ft.

Martin & Dubous' No. 1 Close, 330 ft. S and 660 ft. W NE cor. NE SE, Sec. 82, Blk. 23, H.&G.N. Sur. .... Rig.

L. W. Rook's No. 1 M. Nelson, C SW NE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... C.O. 1,950 ft.

J. D. Whittington et als' No. 3 Williams-Laycock, 330 ft. N and E of SW cor. SW, Sec. 9, Blk. 27, H. &G.N.R.R. Sur. ..... Spud.

L. W. Rook's No. 2 A. Smock, C SW SE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.

Wisch Kamper's No. 1 Parsons, C NW NW, Sec. 53, Blk. 23, H.&G.N. Sur. ..... C.O. 1,95[illegible]

Wisch Kamper's No. 2 Wisch-Kamper, 175 ft. N and 164 ft. E of SW cor. NE SW, Sec. 86, Blk. 23, H. &G.N. Sur. ..... S.D. 485 [illegible]

Upham Gas Co.'s No. 1 Raybo, C S½ NW NW, Sec. 105, Blk. 23, H.&G.N. Sur. ..... Rig.

Refinery Equipment!

Vogt Equipment was selected because the purchaser realized the ability of Vogt to build to exacting specifications, not just fabricated but "Vogt Built". This order consisted of bubble towers, separators, and receiving drums. The illustration below shows a typical Vogt built pressure vessel which gives a clear idea of superior workmanship.

Write for Bulletin RE-4 describing Vogt Refinery Equipment in detail.

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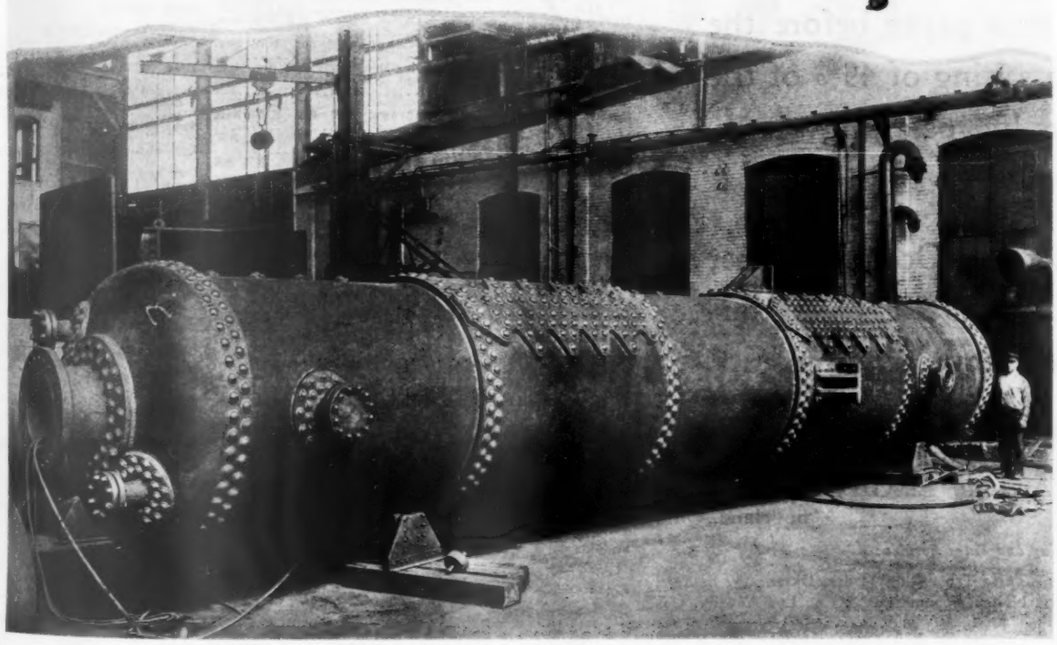
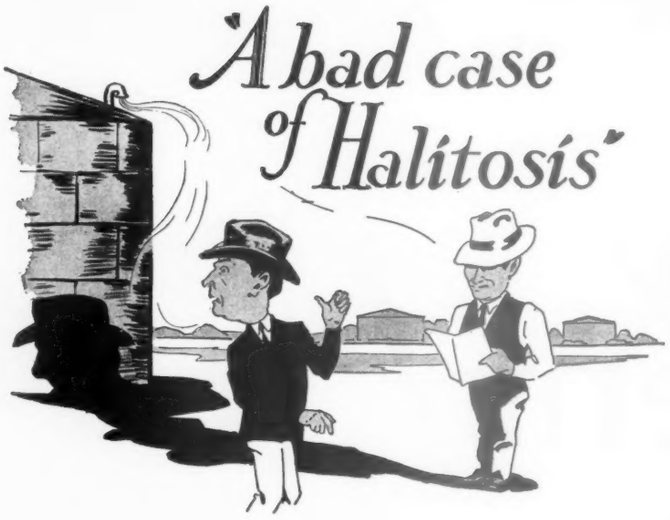
Manufacturers of OIL REFINERY EQUIPMENT, DROP FORGED STEEL VALVES AND FITTINGS, WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS, ICE MAKING AND REFRIGERATING MACHINERY





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"OCECO"
EQUIPMENT WITH A SERVICE RECORD

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 46)

Howard Petroleum Co.'s No. 1 Gilbert, NW cor. SE Sec. 25-8-10 ..... Drlg. 4,400 ft.
Gypsy Oil Co.'s No. 1 McGirt, NE cor. NW SW Sec. 21-6-8 ..... Sand 3,310-30 ft.; corrected, h full water.
T. B. Slick, Inc.'s No. 1 Epperly, NW cor. NE NW Sec. 32-6-8 ..... Dry in Wilcox, 4,655 ft., plugg back.

OKLAHOMA COUNTY

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w.. Drlg. 4,770 ft.
Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Repairing rig 7,122 ft.
Indian Terr. Ill. Oil Co.'s No. 1 fee, C SE SE Sec. 24-11-3w ..... Flowing 5,562 bbls. daily fro 5,496 ft.

OKFUSKEE COUNTY

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10 ..... Shut down 622 ft.
T. B. Slick Inc.'s No. 1 Wolf, SE cor. NE SE Sec. 21-11-7.. Standardizing 3,900 ft.
Dixie Oil Co.'s No. 1 Drew, NE cor. SW Sec. 8-13-10..... Dry and abandoned 3,437 ft.
Erwin and others' No. 1 Patterson, NW cor. SE. Sec. 15-13-9 ..... Location.

SEQUOYAH COUNTY

Cooper & Badger's No. 1 Young, NW cor. NE NE Sec. 7-12-20 ..... Shut down 440 ft.
Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Drlg. 875 ft.
Buffington et al's No. 1 Meicher, C SW NW Sec. 31-12-24 ..... Shut down 1,750 ft.

PAWNEE COUNTY

Washoma Oil Co. and others' No. 1 Buffalo, SE cor. NE Sec. 33-22-5 ..... Shut down 3,640 ft.

POTTAWATOMIE COUNTY

Phillips-Atlantic's No. 1 Winrow, SW cor. NE NE Sec. 11-9-4 ..... Dry and abandoned 4,672 ft.
Shell Pet. Corp.'s No. 1 Livingston, SW cor. SE Sec. 33-7-5 ..... Standardizing 4,328 ft.
Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW NE Sec. 24-8-2 ..... Fishing 4,959 ft.
Shell Pet. Corp.'s No. 1 Lowe, SW cor. NW NE Sec. 17-6-5 ..... Cleaning out 4,920 ft.
Pure Oil Co.'s No. 1 Lindley, SE cor. SW SE Sec. 15-8-6.. Hunton 4,124-40 ft., flowing bbls.
T. B. Slick's No. 1 Sailor, SE cor. NW NW Sec. 12-8-3.... Drlg. 3,620 ft.
T. B. Slick and Shell Pet. Corp.'s No. 1 Hurst, SE cor. NW NW Sec. 17-7-2 ..... Fishing 6,098 ft.
Tomlinson et al's No. 1 Wisenhurst, NW cor. NE SE Sec. 35-7-5 ..... Wilcox sand 4,582-94 ft.; hole f water; dry and abandoned.
Phillips Petroleum Co.'s No. 1 Parman, SE cor. SW Sec. 15-8-4 ..... Wilcox sand 4,644-73; 3,000 ft. water; dry and abandoned.
Champlin Refining Co.'s No. 1 Foster, SW cor. NE SW Sec. 14-7-5 ..... Dry and abandoned 4,434 ft.
Shell Pet. Corp.'s No. 1 Wyatt, SW cor. NW NE Sec. 17-6-5 ..... Dry and abandoned 4,414 ft.
Mid-Continent Petroleum Corp.'s No. 1 James, SE cor. SE Sec. 22-5-3 ..... Location

CADDO COUNTY

Magnolia Petroleum Co.'s No. 1 Shelby, SW cor. SW Sec. 28-10-12w ..... Dry and abandoned 4,473 ft.
J. B. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w.... Shut down 150 ft.
Wirt Franklin's No. 1 North, NW cor. NW Sec. 18-10-13w. Drlg. 1,775 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.
English Drilling Co.'s No. 2 Pruitt, CNL NW SE Sec. 22-6-10w ..... Rigged up and shut down.
Red Bank Oil Co.'s No. 1 Shanklin, C NW Sec. 15-12-11w. Dry and abandoned 4,601 ft.

OSAGE COUNTY

White Eagle Oil & Ref. Co.'s No. 1, SE cor. NE Sec. 25-26-6 ..... Dry and abandoned 2,802 ft.

STEPHENS COUNTY

Wade-Martin & Smythe's No. 1 Vestal, NE cor. SE Sec. 20-2-5w ..... Dry and abandoned 2,510 ft.
Stahl & Burris' No. 1 Jefferson, SE cor. NE NW Sec. 2-1-7w ..... Drlg. 2,576 ft.

SEMINOLE COUNTY

Prairie Oil & Gas Co.'s No. 1 Davis, NE SE Sec. 21-10-7.. Rigging up standard tools ft.
Superior and Fuhrman's No. 1 Fay, NW cor. SE SW Sec. 27-11-6 ..... Underreaming 4,700 ft.
Magnolia Pet. Co.'s No. 1 Germany, SE cor. NW Sec. 30-9-5 ..... Underreaming 4,355 ft.
Phillips Pet. Co.'s No. 1 Miller, NW cor. SW Sec. 34-11-7 ..... Drlg. 2,460 ft.
Burke-Greis Oil Co.'s No. 1 Cyrus, SE cor. NE NW Sec. 13-9-7 ..... Underreaming 3,380 ft.
Harris and others' No. 1 Stidham, SE cor. NW Sec. 30-9-8 ..... Dry and abandoned 4,582 ft.
C. B. Shaffer's No. 1 Carolina, SE cor. SW NE Sec. 4-6-7. Drlg. 4,725 ft.
E. W. Whitney's No. 1 Harjo, NE cor. NW NE Sec. 25-7-6 ..... Plugged back 4,325 ft., and sh down.
Gypsy Oil Co.'s No. 1 Andrews, NE SE NW Sec. 27-10-7 ..... Shut down 3,730 ft.
Shaffer Oil & Ref. Co.'s No. 1 Catchochee, SW cor. SW NE Sec. 15-10-7 ..... Dry and abandoned 3,782 ft.
Prairie Oil & Gas Co.'s No. 1 Rogers, SE cor. NE SE Sec. 14-10-6 ..... Dry and abandoned 4,729 ft.
T. W. Adkins' No. 1 Reed, NE cor. NW Sec. 2-8-8..... Show oil and gas 4,063 ft.
T. B. Slick, Inc.'s No. 1 Tiger, NW cor. SW NE Sec. 13-8-5 ..... Recementing 5-inch, 4,493 ft.
Magnolia Petroleum Co.'s No. 1 Sissy, NW cor. NE Sec. 33-8-7 ..... Wilcox 4,332-42 ft.; hole full water; dry and abandoned.
McCulloch Oil Co.'s No. 1 McGilbray, SW cor. SW NE Sec. 4-8-8 ..... Drlg 1,630 ft.
Empire Gas & Fuel Co.'s No. 1 Harjo, SW cor. NW SE Sec. 17-7-6 ..... Hole full water, Wilcox 4,693-4,6 ft.
Mariand Oil Co.'s No. 1 Strothers, NW cor. SE NE Sec. 8-10-7 ..... Fishing 3,550 ft.
Magnolia Pet. Co.'s No. 1 Carroll, SW cor. NW SE Sec. 1-7-5 ..... Shut down 3,895 ft.
T. B. Slick, and others' No. 1 Davis, NE cor. NE Sec. 26-6-8 ..... Spudded.

TILLMAN COUNTY

Allen & Treadwell's No. 1 Howell, NW cor. SE Sec. 13-1-17w ..... Drlg. 400 ft.

MAJOR COUNTY

Randau & Mooney's No. 1 Parker, SE cor. NE NW Sec. 4-23-16w ..... Show of oil 1,235 ft.; shut dow
Earl and others' No. 1 Turner, C NE NE Sec. 23-20-14w.. Rig.
Wilson et al's No. 1 Unknown, NE cor. NE Sec. 4-23-16w. Cellar.

WOODS COUNTY

E. K. Miller's No. 1 Copenhavera, NW cor. NW Sec. 18-24-13w ..... Rig.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Drlg. 1,547 ft.
Sinclair Oil & Gas Co.'s No. 1 Thompson, C SW SW Sec. 33-27-16w ..... Rig.

MURRAY COUNTY

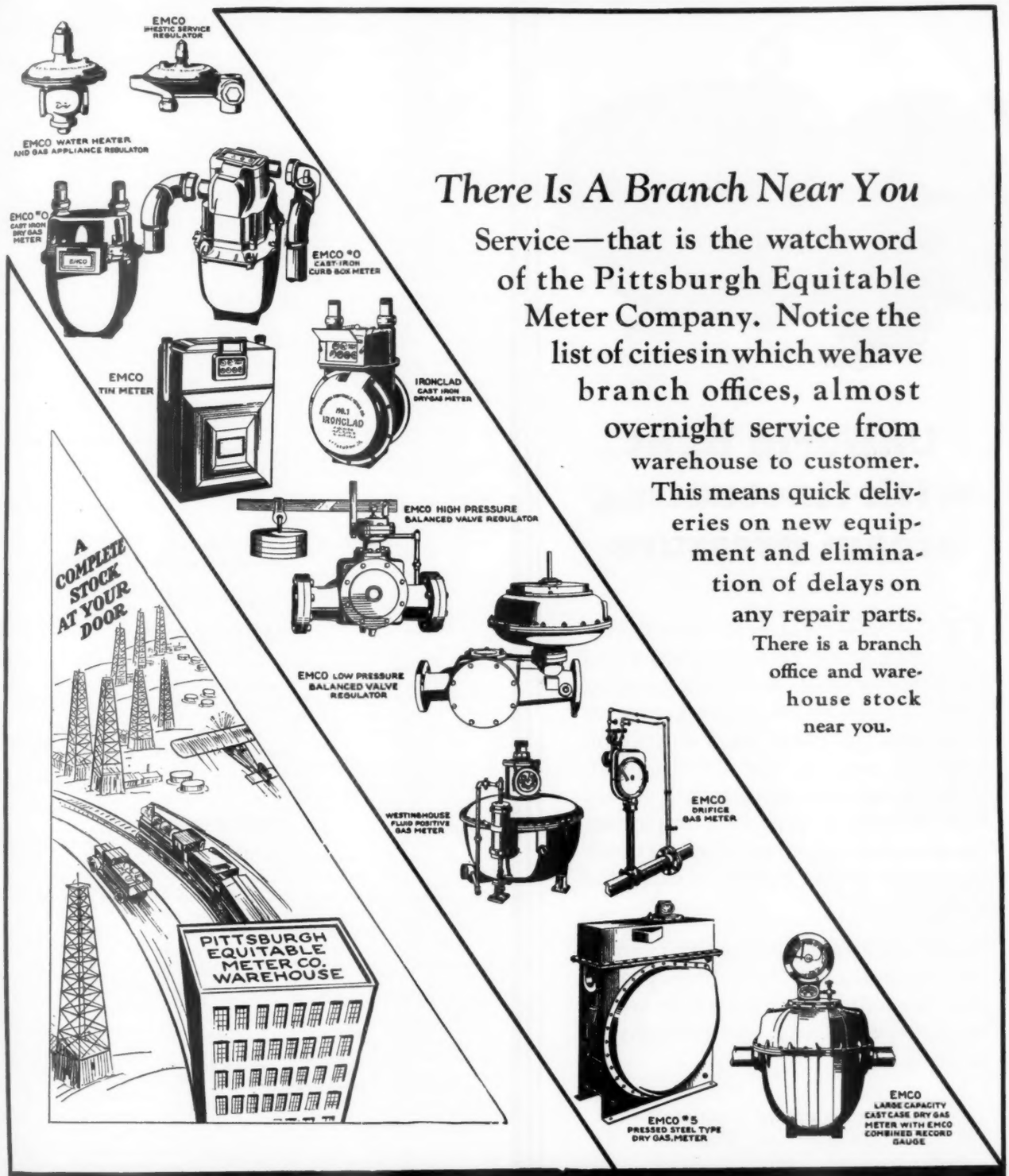
Bison Oil Co.'s No. 1 Labor, NW cor. NW Sec. 17-1-2.... Drlg. 1,770 ft.

DEWEY COUNTY

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w ..... Shut down 4,255 ft.
Don Sifers' No. 1 Jordan, SW cor. NW Sec. 16-16-17w.... Spudded and shut down.

BECKHAM COUNTY

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w ..... Shut down 3,460 ft.
Martin and others' No. 1 Cluck, NW cor. SE Sec. 1-8-25w. Drlg. 2,540 ft.
L. C. Hivicks' No. 1 Davis, C NW NE Sec. 4-11-26w..... Shut down 725 ft.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Shut down 2,402 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w ..... Drlg. 660 ft.
Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 35-9-22w ..... Shut down 1,500 ft.
Day Oil Co.'s No. 1 Ault, NW cor. NW Sec. 33-8-21w.... Drlg. 1,400 ft.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GRADY COUNTY

Remington and others' No. 1 Fryrear, SW SW NE Sec. 13-9-5w ..... Shut down 720 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w .... Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.
Commerce Development Co.'s No. 1 Taylor, C NE NW Sec. 4-3-7w ..... Testing sand 2,410-21 ft.
J. B. Nichols' No. 1 Brake, SE cor. NE SE Sec. 7-5-7w ... Shut down 2,307 ft.

McINTOSH COUNTY

Marione and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 2,387 ft.; corrected.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 5,451 ft.
Wolfe and others' No. 1 Unknown, NW cor. SE Sec. 15-12-18 ..... Rig on ground.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-1-1w ..... Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Hentleman, NE cor. NE Sec. 8-10-2w ..... Drlg. 1,800 ft.

KIOWA COUNTY

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w ..... Shut down 530 ft.
Sloan-Russell's No. 1 Rushton, NE cor. SW SE Sec. 6-5-14w ..... Abandoned 1,524 ft.
J. M. Burke's No. 1 Fox, SW cor. NW Sec. 4-6-16w ..... Shut down 937 ft.
Johnson & McDowell's No. 1 Thompson, SW cor. NE Sec. 6-6-15w ..... Drlg. 2,365 ft.
Adams et al's No. 1 Fanning, NW cor. SW Sec. 2-6-17w .. Machine.
Dave Malernee's No. 1 Van Kirk, NW cor. NW Sec. 35-7-15w ..... Shut down 858 ft. in granite.
A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

CUSTER COUNTY

W. E. Witt's No. 1 Wellman, C SE Sec. 1-14-14w ..... Rig and tools.

PONTOTOC COUNTY

Moore & Curran's No. 1 Allen, SE cor. SW SW Sec. 23-5-5 ..... Shut down 1,460 ft.
Shell Pet. Corp.'s No. 1 Folsom, NW cor. SW Sec. 20-4-4 ..... Dry and abandoned 2,610 ft.
Texas Pacific Coal & Oil Co.'s No. 1 Stewart, C SW NE Sec. 11-5-8 ..... Dry and abandoned 3,509 ft.
American Oil Refining Co.'s No. 1 Jones, NE cor. NE Sec. 18-5-5 ..... Sand 2,500-40 ft., swab 40 bbls.

GARVIN COUNTY

R. F. Garland's No. 1 Strickland, SW NW SW Sec. 10-4-3 ..... Dry and abandoned 3,493 ft.

COMANCHE COUNTY

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w .. Shut down 4,055 ft.
Wirt Franklin Pet. Co.'s No. 2 Holler, NW cor. NW Sec. 2-4-11w .. .. Drlg. 2,092 ft.

COAL COUNTY

McCrow and others' No. 1 Patton, SW SE NE Sec. 35-1-8 ..... Shot 30 qts. 1,850-85 ft.; pumping 11 bbls.
Indian Territory Illuminating Oil Co.'s No. 1 Cook, SW cor. NW Sec. 10-1-11. ..... Drlg. 5,600 ft.
Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 ..... Shut down 3,270 ft.

PITTSBURG COUNTY

McAylor and others' No. 1 Reed, NW cor. SW NW Sec. 7-6-14 ..... Abandoned 1,103 ft.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 ..... Spudded.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w ..... Shut down 2,020 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.
McNull & Gross' No. 1 Smith, CEL SE NW NE Sec. 11-6s-9e ..... Drlg. 300 ft.

MURRAY COUNTY

Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7. Spudded and shut down.

COTTON COUNTY

Cuyler & Pyson's No. 1 Thomas, SE cor. SE SW Sec. 16-4-12w ..... Shut down 2,127 ft.
G. E. Crane and others' No. 1 Montgomery, C NW NE Sec. 33-2s-9w ..... Dry and abandoned 3,505 ft.

JEFFERSON COUNTY

Fritz and others' No. 1 Barrett, C SE SE Sec. 5-6s-7w.. Dry and abandoned 2,269 ft.
Bridwell and others' No. 1 Spring, NE cor. NW SE Sec. 25-6s-6w ..... Dry and abandoned 2,172 ft.
Bridwell et al's No. 1 Trout, CEL NE Sec. 33-6s-6w ..... Drlg. 1,102 ft.
Amerada Pet. Corp.'s No. 1 Emerson, NW cor. SE SW, Section 28-5s-8w ..... Shut down 4,516 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

TILMAN COUNTY

Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w ..... Shut down 805 ft.
Dixie Oil Co.'s No. 1 McKinney, NE cor. NE Sec. 29-3s-18w ..... Drlg. 1,500 ft.
A. N. Pearson's No. 1 Mounts, SW cor. SW Sec. 3-5s-15w.. Dry and abandoned 3,203 ft., show heavy oil.
Stanley & McGregor's No. 1 Mock, NW cor. NW SW Sec. 33-1-20w ..... Dry and abandoned 2,445 ft.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-15w ..... Shut down 2,535 ft.

JOHNSTON COUNTY

Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.
Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 405 ft.
Smith & Kinsley's No. 1 Lane, SE cor. NW Sec. 29-1-7... Shut down 1,306 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e ..... Fishing 830 ft.
Sullivan and others' No. 1 Wines, NW NE NW Sec. 11-7s-5e ..... Shut down 475 ft.
E. J. Stump and others' No. 1 McGinnis, SW Sec. 26-3s-8w ..... Rig.
McCrow and others' No. 1 Trust, SW Sec. 12-1s-8e ..... Drlg. 1,305 ft.

CARTER COUNTY

Devonian Oil Co.'s No. 1 Myer, NW cor. SE Sec. 19-5s-3w. Drlg. 1,385 ft.
Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Spudded.
Schermerhorn Oil Co.'s No. 2 Joliff, NE NW Sec. 24-5s-1e ..... Rigging up.
Humble Oil & Ref. Co.'s No. 1 Hitchcock, SE NE Sec. 12-4s-3e ..... Drlg. 550 ft.

KANSAS WILDCATS

(Continued from Page 48)

Empire Oil & Ref. Co.'s No. 1 Wann, NE cor. NE Sec. 31-12-19w ..... Underreaming 3,515 ft.
Mid-West Exploration Co.'s No. 36 Furthmer, SE cor. SE Sec. 25-12-16w ..... Drlg. 3,105 ft.
Phillips Pet. Co.'s No. 1 Shultz, C NE Sec. 5-12-17w..... Lime 3,573-75; swab'd 280 bbls. oil.
Mid-West Exp. Co.'s No. 1 Austin, NE cor. NE Sec. 36-12-16w ..... Oswald lime 3,105 ft.; 70 bbls. oil daily.
Marland Oil Co.'s No. 1 Vine, SW cor. SW SE Sec. 27-11-19w ..... Drlg. 3,720 ft.
Davis & Haslett's No. 1 Wieland, NE cor. NE Sec. 1-13-16w ..... Drlg. 800 ft.

EDWARDS COUNTY

Amerada & Wilcox's No. 1 Teansil, C NW SW Sec. 32-25-19w ..... Drlg. 4,000 ft.
British American Oil Co.'s No. 1 McCarty, NE cor. NW Sec. 31-25-17w ..... Spudded and shut down.

GEARY COUNTY

Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5.. Shut down 1,200 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w ..... Shut down 2,450 ft.

HARPER COUNTY

Amerada Pet. Corp.'s No. 1 Mendiville, C E SE Sec. 24-34-6w ..... Cleaning out 5,353 ft.

HARVEY COUNTY

R. S. Austin's No. 1 Nieman, SW cor. SW Sec. 21-24-2....Shut down 2,903 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w....Rig.
Helmerich & Payne's No. 1 Lindamond, C SW NE SW Sec. 2-22-1e....Spudded.

JEFFERSON COUNTY

Wichlet Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17....Rigged up and shut down.

JACKSON COUNTY

Garvin & Morton's No. 1 Lutes, SW cor. NW NW Sec. 27-7-15....Shut down 940 ft.

LANE COUNTY

Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w....Spudded and shut down.

MARSHALL COUNTY

Irwin et al's No. 1 Cooper, NE cor NW Sec. 10-3-7....Drlg. 620 ft.

MARION COUNTY

Empire Oil & Ref. Co.'s No. 1 Burhart, SE cor. NE NE Sec. 11-20-3....Shut down 2,400 ft.
J. E. Hauna's No. 1 Pankratz, NE cor. NE SW Sec. 13-20-3....Rig.
Empire Oil & Ref. Co.'s No. 1 Jenson, SE cor. NW Sec. 26-22-5....Dry and abandoned 2,719 ft.
A. E. Meyers' No. 1 Papp, SW cor. SW NE Sec. 10-18-2..Spudded.

MEADE COUNTY

Blackwell O. & G. Co.'s No. 1 Beyer, SE cor. NW SE Sec. 9-33-28w....500,000 ft. gas and 2 bailers water total depth 4,356 ft.

MITCHELL COUNTY

Ben Gurley et al's No. 1 Crombil, C NE NE Sec. 32-9-7w....Dry and abandoned 4,108 ft.

MORRIS COUNTY

Hugh Faulder's No. 1 Wendt, SW cor. SE SE Sec. 18-15-5....Abandoned.
Skelton et al's No. 1 Iles, NW cor. NW Sec. 25-16-5.....Rig abandoned.
O'Day et al's No. 1 Scott, NE cor. SW Sec. 6-16-6.....Rig abandoned.

McPHERSON COUNTY

Ted Washabaugh's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w....Shut down 2,100 ft.
Lariaux et al's No. 1 Martinson, NE cor. Sec. 9-19-3w.....Rig.
McPherson Gas Co.'s No. 1 Stein, SW cor. NE SW Sec. 17-18-1w....Underreaming 3,070 ft.
McPherson Gas Co.'s No. 1 Gustafson, C NE Sec. 3-17-2w....Shut down 3,597 ft.
W. C. Newman's No. 1 Diepenbrock, NW cor. NE Sec. 2-17-1w....Drlg. 3,430 ft.
McPherson Gas Co.'s No. 1 Wedell, C SW Sec. 12-20-2w....5,000,000 ft. gas 2,983 ft. casing
Vickers Pet. Co.'s No. 1 Wedell, C SW Sec. 12-20-2w.....Rig.
Mid-Kansas Oil & Gas Co.'s No. 1 Yoder, C NW SW Sec. 8-20-4w....Drlg. 1,260 ft.
Marland Prod. Co.'s No. 1 Wilkering, C SW SW Sec. 9-21-1w....Drlg. 905 ft.

NESS COUNTY

Barnsdall Oil Co.'s No. 1 Lauk, C SW Sec. 35-18-21w....Casing 600 ft.

OSBORNE COUNTY

L. D. Jarvis' No. 1 Jellison, SE cor. SE Sec. 13-10-15w....Spudded and shut down.

OTTAWA COUNTY

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w..Shut down 2,820 ft.

PAWNEE COUNTY

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 21-21-16w..Shut down 1,560 ft.

PHILLIPS COUNTY

Watsonia Oil Co.'s No. 1 Marklein, NE cor. SW Sec. 21-3-19w....Shut down 3,015 ft.
British American Oil Co.'s No. 1 Weinman, C SW SW Sec. 34-3-19w....Rig.

RENO COUNTY

Austin Drilling Co.'s No. 1 Strickley, SW cor. NW Sec. 17-25-5w....Rig.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w....Cellar.
Higgins & Stembubble's No. 1 Shurr, NE cor. SW Sec. 21-20-10w....Spudded and shut down.

ROOKS COUNTY

Empire G. & F. Co.'s No. 1 Woodrill, NE cor. SE NW Sec. 15-8-18w....Drlg. 3,116 ft.
Prairie Oil & Gas Co.'s No. 1 Sandberg, C SW Sec. 20-9-18w....Drlg. 715 ft.
Krueger et al's No. 1 Poore, NE cor. NE Sec. 14-8-16w....Drlg. 3,475 ft.
Burford & Brimm's No. 1 Toxa, NE cor. SW SE Sec. 22-19-17w....Spudded and shut down.
Skelly & Mid-West's No. 1 Jones, SW cor. NE NW Sec. 28-7-16w....Shut down 3,485 ft.

RUSH COUNTY

Phillips Pet. Co.'s No. 1 Legleiter, NE cor. NW SE Sec. 10-16-18w....Spudded.
Sinclair Oil & Gas Co.'s No. 1 Berching, NW cor. NE NW Sec. 9-16-16w....Fishing 3,474 ft.
Danciger Oil & Ref. Co.'s No. 1 Poland, NE cor. SW NE Sec. 17-19-17w....Drlg. 530 ft.

RUSSELL COUNTY

Joe Liggett's No. 1 Maier, SE cor. NE SE Sec. 8-11-16w..Top Oswald 3,016 ft.; show oil and water, drlg. 3,280 ft.

SALINE COUNTY

M. Esty et al's No. 1 Peterson, C NE Sec. 6-16-5w.....Spudded and shut down.
Boyle et al's No. 1 Miller, SW cor. SE Sec. 11-16-1w.....Cleaning out 2,615 ft.
Nathan Jones et al's No. 1 Robertson, NW cor SW Sec. 27-14-2w....Underreaming 2,847 ft.

SEDGWICK COUNTY

Bu-Vi-Bar et al's No. 1 Roberts, SE cor. SW Sec. 1-26-1w....Rig.
R. R. Shawver et al's No. 1 Broels, NE cor. SW Sec. 5-24-2e....Drlg. 2,000 ft.
Barnsdall Oil Co.'s No. 1 Means, NW cor. SW Sec. 34-27-2....Drlg. 2,112 ft.
Lewis et al's No. 1 Taylor, NW cor. NE Sec. 23-27-2.....Drlg. 935 ft.
J. H. Tatlock et al's No. 1 Goeldner, NW cor. NE Sec. 6-29-2e....Shut down 2,200 ft.
Hyser et al's No. 1 Siroot, SW cor. NW Sec. 3-26-2w.....Drlg. 510 ft.
Maglason et al's No. 1 Buckles, NW cor. SE Sec. 3-28-1w..Shut down 250 ft.
McCulloch Oil Co.'s No. 1 John, C NE SW NE Sec. 24-29-1e....Fishing 1,804 ft.
Morgan & Tilley's No. 1 Fitzgerald, NW cor. NE Sec. 5-26-1w....Rig.
Barnsdall Oil Co.'s No. 1 Faber, SW cor. NW Sec. 4-27-1w....Cleaning out 3,010 ft.
Bu-Vi-Bar Pet. Co.'s No. 1 Steel, SE cor. SE Sec. 1-26-2w..Underreaming 3,310 ft.
Connell & Slick's No. 1 Cross, NE cor. NE Sec. 27-25-1w..Drlg. 2,962 ft.
VanZant & Mason's No. 1 Fox, C NW SW Sec. 19-26-1w..Drlg. 2,975 ft.
Barnsdall Oil Co.'s No. 1 Samuels, NE cor. NW Sec. 24-26-1....Drlg. 2,580 ft.
Marland Prod. Co.'s No. 1 Goodrich, SW cor. NE SW Sec. 16-25-1....Flowed 2,120 bbls. in 12 hours; pinched in.
Shell Pet. Corp.'s No. 1 Lygrisse, SE cor. NE Sec. 15-26-2e....Spudded.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 23-7-40w....Shut down 3,035 ft.

STEVENS COUNTY

Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w..Casing trouble 600 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w....Shut down 1,218 ft.
McKenna et al's No. 1 Haun, SE cor. NE Sec. 10-33-38w..Drlg. 1,510 ft.

SMITH COUNTY

Mid-Kansas Oil & Gas Co.'s No. 1 Unknown, NE cor. NE Sec. 4-2-13w....Rig.

SUMNER COUNTY

McCulloch Oil Co.'s No. 1 Teettle, SW cor. NE Sec. 29-34-1w....Shut down 4,350 ft.
Gypsy Oil Co.'s No. 1 Williams, NW SE SW Sec. 16-35-2w....Drlg. 4,400 ft.
Helmerich & Payne's No. 1 Warlick, SE cor. NE Sec. 8-34-2....Dry and abandoned 3,854 ft.
Otatot et al's No. 1 Barlow, SE cor. SE Sec. 22-33-3w....Plugging back to 4,150 ft.
Otatot et al's No. 1 Volker, NW cor. NE Sec. 9-35-1.....Rig.
Davidson and others' No. 1 Strickland, SW cor. SE Sec. 12-35-1w....Rig.

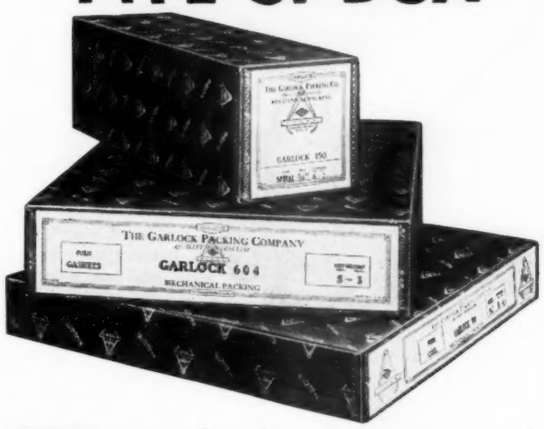
TREGO COUNTY

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w....Drlg. 3,030 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3...Rig.

WHY WE ADOPTED A NEW TYPE OF BOX



IN the past we have been packaging Garlock packings in the strongest containers it was possible to purchase. However, we did not consider them a satisfactory package for our Quality Controlled products.

After several years of painstaking investigation we found a super fiber board that is grease proof, light in weight and extremely strong.

All Garlock packings are now put up in this new type of box. On account of its grease and moisture proof properties you will find the packings are protected in every way and will keep in the best of condition.

Eliminate waste by making use of this new feature of Garlock Service.

THE GARLOCK PACKING COMPANY
PALMYRA, N. Y.

TEAMWORK!

Lubricated Valve and Flexible Joint

on Loading Racks

YOU can't lose when you have both of these Barco products working for you. The Lubricated Plug Valve won't spurt and it keeps maintenance costs low. It is lubricated and will outlast a dozen ordinary valves, which cause so much grief.

The Barco Flexible Joint combines great flexibility and extreme durability. From the first day they will move freely in any direction and will not start leaking after a little service. The design—ball joint and double gaskets—insures long service and minimum wear.

Send for the latest bulletin on valves and joints. It's free, but it's valuable.

See our exhibit in Booths 112 and 113 at the Chicago Power Show, February 12 to 16.

Barco Manufacturing Company
1801 Winnemac Avenue, Chicago, Illinois

Agents:
Vinson-Canter Co., Tulsa, Oklahoma
M. N. Dannenbaum Co., Houston, Texas

BARCO
Valves and Joints

O&GJ 1-17-Gray

KENTUCKY-TENNESSEE

(Continued from Page 64)

each, initial production. Bigler and Becker drilled a dry hole in No. 7 on the Edward Hendricks farm, in the Whittaker Pool.

In the Sunnydale Field of Ohio County, the Wood Oil Co., Inc., has a 50-bbl. initial producer in No. 6 on the C. A. Duke 200-acres. In this well 398 feet of casing was set, sand from 422 to 436 feet, total depth 448 feet, and shot with 80 quarts. Same company drilled No. 7 on the J. C. Smith 151 acres, in the same field, setting 387 feet of casing, got sand at from 411 to 428 feet and drilled to a total depth of 434 feet, shooting with 90 quarts, which also produced an initial of 50 bbls.

In the Sunnydale Field, same county, Arnold and others' second test on the Baker Brothers' 100-acre farm pumped but 3 bbls. initial at a total depth of 532 feet after giving it a 30-quart shot. No. 2, same farm, is drilling. In the same field, the Sunnydale Oil & Gas Co.'s No. 1 on the George Russell 50 acres, was a duster at 650 feet.

Daviess County Wells

In Daviess County, only one producing oil well out of six tests is shown and that is a 30-bbl. producer at a depth of 870 feet owned by Huff and Calderwood on Mrs. Belle Salmon farm in the Jones area. Same parties drilled a dry hole on the Widow Martin farm, same area.

Thompson and others' test on the Asher heirs farm developed into a dry hole. Leeper Oil Co.'s No. 5 well, 1,400 feet from the north and west lines of the C. D. Veach 209 acres, came in a rank duster.

Petroleum Exploration's test on the U. M. Barrett 200-acre farm, in the Jones Pool, was dry. A dry hole was also drilled by H. A. Henry on the Salmon lease.

Other Wells

In the Bowling Green Field of Warren County, the Ohio Oil Co.'s No. 1 C. M. Justice farm, produced but 1 bbl., initial at 966 feet.

In the Scottsville Field of Allen County, J. D. White drilled in a 1-bbl. producer in No. 10 on the J. B. Williams farm, at 362 feet. D. D. Defenbaugh's second test on the Bean farm was dry at 384 feet.

In the Pellville Field of Hancock County, B. Calvert's test on the Rena Brown farm proved a real duster.

Field Pickups

The Illinois Pipe Line Co. handled through its line in western Kentucky a total of 197,924.27 bbls. during December.

The Trico News says: "Within a short time the well being drilled by Contractor H. W. Deague on the Arthur Deckard farm, in Hardin County, western Kentucky, for Petroleum Exploration Co. will be completed. This is the second well drilled under the Petroleum Exploration contract with the Louisville Gas & Electric Co., whereby the gas rights under some 26,000 acres in Hardin and Meade Counties, Kentucky, are transferred to the latter. Arrangements have been made for the drilling of a third well on this block of acreage immediately upon the completion of the Deckard well. At present there are six or seven wells drilling in the area adjoining and immediately to the southwest of the 26,000-acre block, and it is felt this particular section in which Petroleum Exploration is interested will be tested extensively for Corniferous production. The gas wells drilled in this area to date have had excellent Corniferous sand, extremely porous and dolomitic in character and with this as a basis, several independent parties have leased up blocks southwest of the gas wells and have started tests. Drilling activity covers all of Meade County and the northern part of Breckenridge County."

The Exploration Co. drilled a dry hole on the Dunaway farm, in Hardin County and besides drilling the Deckard well made a location for a third test which will be on the R. H. Ditto farm.

The Creek Drilling Co. has No. 10 on the Dutch Tompkins lease in the Brown Pool, of Daviess County, in the sand and it is making a good showing, as does No. 3 on the Jeff Leet farm close by.

W. G. Roder and others are drilling on the J. E. Boreman farm, 2 miles north of the Jones Pool, and north of the Leitchfield Road, in Daviess County. This is a semiwildcat. Fred Botts and others are drilling on the Ed Crow farm, near the Gilbert Jolly Pool, several miles west of the Ambrose Pool, in the western part of Ohio County. Maple, Lyle and others are drilling on the Tom Howard farm, near Bells Run, also in Ohio County.

CENTRAL WEST

(Continued from Page 64)

in Gross Township, Spencer County, C. Walter Randall and others' test on the John C. Kinney heirs farm, Section 18, came in a duster at a depth of 1,220 feet. West of Troy, in the same county, the Packard Oil Co.'s second test on the Arthur Ray farm, found a 26-foot pay sand, the well being estimated at 25 bbls.

Fred F. Bays, well known Sullivan County oil operator, has started a test on the Morris Unger farm, in Gill Township, in the southwestern part of Sullivan County.

In Blue Creek Township, Adams County, in the old Trenton Rock area in the northeastern part of the State, D. D. and H. O. Jones are drilling a test on the John Clauser farm, Section 28.

Illinois

Southwest of Allendale, in Wabash Township, Wabash County, the Ridge Farm Oil Co.'s No. 4 well, 600 feet from the south and east lines of the W. M. Price farm, in the southwest quarter of Section 14, brought in one of the best completions of late, with an initial production of 150 bbls. naturally from the Biehl sand at from 1,566 to 1,575 feet. The Boeger Oil Co.'s second test, 200 feet from the north line of the L. G. Stillwell farm, in the southeast quarter of Section 1, same township, and near Allendale, produced an initial of 100 bbls. after given a 40-quart shot. This well also found its oil in the Biehl sand at from 1,396 to 1,410 feet. The Leighty Oil Co.'s test in the northwest corner of the A. Prout farm, in the southwest quarter of Section 4, same township, and west of Allendale, came in a dry hole at 1,575 feet, and it was the first completion to be made in Illinois for the new year.

In Prairie Township, Crawford County, J. F. Bolinger's No. 3 well, 550 feet from the north line and 250 feet from the west line of the J. P. Evans farm, in the northwest quarter of Section 36, pumped 12 bbls. initially at 994 feet.

In Bridgeport Township, Lawrence County, the Ohio Oil Co. abandoned Nos. 1 and 5 on the Aletha Griggs No. 1 farm, Section 18. In Petty Township, Snowden & McSweeney pulled out old No. 8 on the John W. Armitage farm, Section 2.

Advice from Owensboro, Ky., is that the wildcat well drilled in Saline County, in the southeastern part of Illinois, is attracting considerable attention, although its actual production is yet unknown, but the report is that it looks like a commercial producer and opens up something new for the trade to work on. The oil was encountered in a sand at 1,413 feet and drilled to a total depth of 1,425 feet. The discovery well is in the SW SW, Section 10, Independence Township. The name of the owners of the well has not been announced but they have secured a large leased acreage and other leasers have been securing acreage. The same parties that drilled the discovery well will start two additional wells at once, one of these will be close to the new well and the other some distance away, as the new well is reported to be on the edge and it will take a number of tests to discover the size of the structure. The second test should start work within a few days and the third venture will be not far from the present well.

This well is located on the Eldorado Dome, Wasson anticline, mention of which was made in The Oil and Gas Journal, under the heading of Illinois, on page 110 of the December 20, issue.

ONLY MINOR CHANGES IN GASOLINE TANK WAGON PRICES ON JANUARY 1

The average gasoline tank wagon price in the 50 representative cities included in The Oil and Gas Journal's monthly survey shows practically no change for January 1 when compared with December 1. With the net average price at 16 cents on January 1, it represented an improvement of approximately 1¾ cents compared to a year ago but is still 1½ cents below that on January 1, 1926.

In general, there has been a strong tendency for retail prices to weaken because of the declining refinery market but thus far there has been no widespread price reductions. This is probably due to the fact that retail prices did not advance in proportion to the refinery market during the latter half of last year and the present weakness of the refinery market is restoring the normal differential. Instead of the 2½ to 3-cent margin between the delivered tank car price and the net tank wagon price of six months ago, the margin has increased to 4½ to 5 cents in most cases and approximates the conditions existing over the greater part of the past three years.

Considering the year of 1928 as a whole, there was a consistent improvement in prices month after month and the present dullness is not interpreted as the beginning of another period of low prices. Instead, it is the result of the smaller seasonal demand and retail sellers are obliged to keep their prices up in order to make the greater margin equalize the lesser volume of sales.

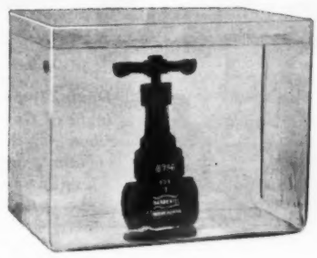
Taxes remained practically unchanged

GASOLINE PRICES EFFECTIVE JANUARY 1, 1929

Table showing gasoline tank wagon prices as of January 1, 1929, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since December 1, 1928. High and low prices and state taxes also given.

	Prices Dec. 1	Price changes Dec.	Prices Jan. 1	High and Low — 1928 — High	1928 Low	— 1927 — High	1927 Low	Tax Jan. 1 1928
Birmingham, Ala.	18.0	....	18.0	18.0	14.0	18.0	14.0	5.0
Phoenix, Ariz.	14.0	....	14.0	18.0	14.0	19.0	16.0	3.0
Little Rock, Ark.	16.0	....	16.0	16.0	11.0	15.0	11.0	5.0
San Francisco, Calif.	14.0	....	14.0	14.0	14.0	14.0	9.0	3.0
Denver, Colo.	16.0	14 14.0	14.0	16.0	13.0	18.0	13.0	3.0
Hartford, Conn.	18.0	....	18.0	18.0	16.0	22.0	18.0	3.0
Dover, Del.	16.0	....	16.0	18.0	16.0	19.0	16.0	3.0
Jacksonville, Fla.	17.0	4 18.0	18.0	18.0	13.0	16.0	10.	5 0
Atlanta, Ga.	18.0	....	18.0	18.0	13.0	18.0	10.0	4.0
Boise, Idaho	20.5	....	20.5	20.5	19.5	22.5	19.5	4.0
Peoria, Ill.	15.2	....	15.2	15.2	9.0	18.2	9.0	...
Chicago, Ill.	15.0	..	15.0	15.0	14.0	17.0	14.0	...
Indianapolis, Ind.	15.2	....	15.2	15.2	10.2	18.2	10.2	3.0
Des Moines, Iowa	15.5	....	15.5	15.5	11.9	16.0	9.9	3.0
Wichita, Kans.	13.8	..	13.8	13.8	10.8	15.8	10.8	2.0
Louisville, Ky.	16.0	....	16.0	16.0	13.0	17.0	13.0	5.0
New Orleans, La.	10.5	17 12.5	12.5	14.5	10.5	14.5	11.5	*3.0
Augusta, Me.	17.0	....	17.0	18.0	17.0	22.0	17.0	4.0
Baltimore, Md.	15.0	....	15.0	16.0	15.0	19.0	16.0	4.0
Springfield, Mass.	18.0	..	18.0	18.0	16.0	22.0	12.0	...
Detroit, Mich.	15.8	....	15.8	15.8	11.8	18.8	11.8	3.0
Duluth, Minn.	16.5	....	16.5	16.5	12.5	19.5	12.5	2.0
Natchez, Miss.	16.5	....	16.5	16.5	12.5	15.5	12.5	5.0
Kansas City, Mo.	14.9	....	14.9	14.9	10.9	17.9	10.9	*3.0
Helena, Mont.	20.5	....	20.5	20.5	19.5	22.0	19.5	3.0
Omaha, Neb.	15.25	....	15.25	15.25	13.25	14.25	12.25	2.0
Reno, Nev.	18.0	....	18.0	18.0	18.0	18.0	15.0	4.0
Newark, N. J.	15.0	..	15.0	16.0	15.0	19.0	16.0	2.0
Albuquerque, N. Mex.	17.0	....	17.0	17.0	14.0	20.0	16.0	5.0
New York, N. Y.	18.0	....	18.0	18.0	17.0	22.0	17.0	...
Charlotte, N. C.	15.0	....	15.0	17.0	15.0	19.0	16.0	4.0
Fargo, N. Dak.	17.0	....	17.9	17.0	12.0	20.9	12.0	2.0
Cleveland, Ohio	16.0	....	16.0	16.0	14.0	19.0	14.0	3.0
Tulsa, Okla.	14.0	....	14.0	14.0	10.0	15.0	10.0	3.0
Portland, Ore.	14.5	..	14.5	14.5	14.5	14.5	11.0	3.0
Philadelphia, Pa.	16.0	....	16.0	18.0	15.0	19.0	12.0	*3.0
Providence, R. I.	18.0	....	18.0	19.0	17.0	22.0	17.0	2.0
Charleston, S. C.	15.0	....	15.0	17.0	15.0	19.0	15.0	5.0
Huron, S. Dak.	16.3	....	16.3	16.3	14.5	19.5	11.5	4.0
Memphis, Tenn.	14.0	....	14.0	16.0	12.0	15.0	10.0	3.0
Dallas, Tex.	14.0	....	14.0	14.0	9.0	13.0	10.0	2.0
Salt Lake City, Utah	18.5	...	18.5	18.5	16.5	20.5	16.5	3.5
Burlington, Vt.	17.0	..	17.0	18.0	17.0	22.0	17.0	3.0
Norfolk, Va.	15.0	....	15.0	16.0	14.0	18.0	16.0	5.0
Washington, D. C.	15.0	....	15.0	16.0	15.0	19.0	16.0	2.0
Charleston, W. Va.	15.0	....	15.0	17.0	15.0	18.0	16.0	4.0
Milwaukee, Wis.	15.1	....	15.1	15.1	13.1	18.1	13.1	2.0
Casper, Wyo.	16.0	....	16.0	16.0	14.0	18.0	14.0	3.0
Seattle, Wash.	14.5	....	14.5	14.5	14.5	14.5	11.0	2.0
Minneapolis, Minn.	16.2	....	16.2	16.2	11.0	16.2	11.1	2.0
Average price	15.98	....	16.00	16.54	13.54	18.15	13.55	3.03

*State tax 2 cents, remainder city tax.



—and Barberite showed no loss whatever!

Out of two hundred alloys developed and tested to meet the sulphuric acid problems of oil refineries, Barberite was the final selection!

Barberite, a high copper bronze alloy containing nickel, has remarkable corrosion-resisting properties, in many specific instances superior to white nickel alloys and other high copper bronzes. The high tensile strength of Barberite is comparable to mild and medium carbon steel. Barberite is tough, elastic, dense and shows no tendency to segregate, separate into pockets or crystallize.

Here are the tests we gave Barberite:

We immersed it in 16% and 60% sulphuric acid at room temperature for one year—it showed no corrosion loss! Barberite showed no loss in 16% sulphuric acid at 96° C (205° F) when immersed for one hundred hours. In 60% sulphuric acid at the same temperature for the same period, the corrosion loss was negligible.

Besides successfully resisting sulphuric acid, Barberite resists many other acids, bases, salts and organic compounds—a list is given in our folder which we will gladly send upon request.

Barberite Standard Gate Valves are furnished in these sizes: Screwed bonnet, screwed ends ¾", 1", 1½". Bolted bonnet, screwed or flanged ends, 2", 3", 4", 6", 8".

We are prepared to make special Barberite castings from patterns furnished, or we will make patterns to order.

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Non-Corrosive Acid-Resisting

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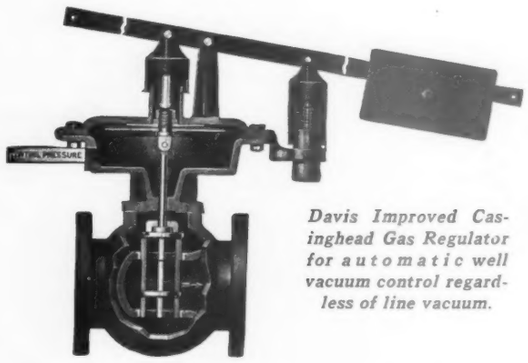
for Oil Refineries and General Chemical Purposes



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Accurate, dependable vacuum regulation for individual wells

ACCURATE, dependable vacuum regulation for individual oil wells is obtained with the Davis Casinghead Gas Regulator through the sound simplicity of its design and the sturdiness of its construction.

There is only one internal moving part—the balanced disc which is connected to the diaphragm. Dependable operation is assured by the visible action of the external counterweight.

Accurate regulation is obtained by means of an equalized controlled vacuum taken from the line a short distance from the valve. The valve body and the diaphragm are separated, permitting this method of control.

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TULSA LOS ANGELES DALLAS

Automatic valve makers for over fifty years

DAVIS VALVE SPECIALTIES

O&GJ 1-17-Gray

during 1928, the year being exceptionally uneventful in that respect. The only recent change was the increase in the Mississippi tax from 4 cents to 5 cents on December 1.

AVERAGE TANK WAGON PRICE IN 50 CITIES

(Exclusive of Tax)

January 1, 1927	17.567
February 1	17.469
March 1	17.007
April 1	16.160
May 1	15.320
June 1	14.720
July 1	14.86
August 1	14.89
September 1	14.62
October 1	14.39
November 1	14.32
December 1	14.21
January 1, 1928	14.29
February 1	14.33
March 1	14.71
April 1	14.81
May 1	15.02
June 1	15.22
July 1	15.29
August 1	15.74
September 1	16.04
October 1	16.34
November 1	16.28
December 1	15.98
January 1, 1929	16.00

ADDITIONAL LINE PIPE BUSINESS EXPECTED

By B. E. V. Luty

PITTSBURGH, Pa., Jan. 14.—Demand for casing and other well material has been moderately light. Ordinary standard or merchant pipe, which is chiefly butt weld, is in good demand for the season of year. Much additional line pipe business is expected to be placed this year, chiefly for natural gas lines.

Steel corporation plans involve a large seamless tube mill at the McKeesport, Pa., pipe plant, blast furnaces, Bessemer steel-making department, rolling mills and pipe furnaces. The seamless tube department would require the building of open-hearth steel-making furnaces. Additional seamless tube capacity at the Lorain, Ohio, plant has also been under contemplation.

Pipe mills have been operating at about 65 per cent of full capacity and tube mills at 80 to 90 per cent.

The steel market in general has been apparently quiet since the first of the year, with no specific developments of consequence. The mills entered the year well filled with shipping orders, there being two particular reasons. Quite a number of contracts expired in December, involving prices below those possible on first quarter contracts, and there was correspondingly heavy specifying, while some buyers held back shipments in December so that the material would not appear in the January 1 inventory.

Throughout the trade the talk is that steel is in a particularly favorable position, with promise of very heavy output in the next few months. As a matter of fact, this would merely be in line with precedent, as regularly steel production has mounted to a peak in March or April. General business conditions are regarded as quite satisfactory, although engagements involving steel have not been especially heavy. The automobile trade, while making sanguine predictions, still has to sell its cars. Freight car buying has been light, despite the rosy predictions made some three months ago about an important buying movement being in prospect. Rail orders have not been up to those of a year ago, and fabricated structural steel lettings, while very heavy up to October 1, have been at only their usual gait since then.

Steel production in December was at not under 85 per cent of capacity and may have run several points above that figure, while January may be counted upon to average around 90 per cent.

CANADIAN FIELDS

(Continued from Page 62)

stock; and the Royalite company has fulfilled its obligations, a permanent organization will be effected.

Royalite Oil Co.'s operations are continuing steadily, with three tests drilling in the deep lime. Of these, Royalite's No. 14, LSD 4, Section 7-20-2w5, which got the lime at the unusually high point of 3,220 feet, is now drilling at 3,248 feet after sidetracking the lost lubricator. Royalite's No. 17, LSD 13, Section 6-20-2w5, is drilling in the lime at 3,802 feet. Royalite's No. 13, LSD 6, Section 13-20-3w5, offsetting Vulcan Oils' No. 1, is at the top of the deep lime at 4,726 feet and will cement casing.

Royalite's No. 12, LSD 3, Section 1[illegible]-20-3w5, is at 3,030 feet, drilling and carrying 10-inch casing. Royalite's No. 1[illegible], LSD 1, Section 12-20-3w5, is drilling at 2,885 feet. Royalite's No. 16, LSD 2, Section 12-20-3w5, is drilling at 4,[illegible] feet. Royalite's No. 18, LSD 15, Section 12-20-3w5, is at 3,812 feet and preparing to run 8¼-inch casing. Royalite's No. 19, LSD 5, Section 6-20-2w5, is at 3,[illegible] feet, underreaming and cleaning out. Royalite's No. 20, LSD 7, Section 12-20-3w5, is at 2,857 feet and drilling. Royalite's No. 21 is drilling at 470 feet.

Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w5, is at 5,137 feet and fishing for drilling rods. Home company's No. 3, LSD 14, same section, is drilling at 4,[illegible] feet. Home company's No. 4, same section, has spudded in and is drilling at 176 feet. North West Associated's No. 1, LSD 6, same section, is drilling at 3,0[illegible] feet.

Imperial's Drilling Program

J. H. McLeod, western production manager for Imperial Oil, Ltd., states that Imperial Oil, Ltd., and its subsidiaries including the Royalite, Dalhousie, Foothills and North West Associated companies, drilled 62,000 feet of hole in 1928, where an objective of 50,000 feet was set. Most of the drilling was in the Turner Valley Field. An objective of 60,000 feet has been set for 1929. New drilling will be started in the Turner Valley as soon as the tests now in progress are completed; while it is possible that some drilling will be undertaken this year in other parts of Alberta.

In the Turner Valley, Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, has set up the first of two separators to handle its wet gas production; but no reports are yet available as to increased crude naphtha recovery. The second separator is now being connected. Okalta Oils' No. 2, LSD 8, same section, in light crude production at 3,170 feet is running 2½-inch tubing and will also install a gas lift to handle the production. Okalta's No. 3, LSD 9, same section, is lowering 12½-inch casing to 2,200 feet.

Illinois-Alberta Oils' No. 2, LSD 14, Section 12-20-3w5, is at 3,550 feet and apparently entered the deep lime at 3,542 feet. Considerable gas met in the Fernie shales was mudded of. If further tests prove the well in the lime, casing will be cemented before drilling into production. Illinois-Alberta's No. 2 at this depth is getting the lime 108 feet higher than No. 1, and 131 feet higher than Royalite's No. 8 offset well, both of which have been good producers.

Regent Oil Co., same LSD, is drilling 120 feet in the lime at 3,852 feet, with a reported wet gas flow around 8,000,000 feet a day.

Vulcan Oils' No. 1, LSD 11, Section 13-20-3w5, is changed to cable tool outfit and will try to sidetrack the lost tools. The hole is in the producing horizon at 5,004 feet. The diamond drill outfit previously used at Vulcan's No. 1 has been moved to Spooner Oils' No. 2, Section 24-20-3w5, to drill the test into the lime; casing was cemented in the lime at 5,080 feet. The well entered the lime around 5,007 feet.

Calmont Oils, LSD 2, Section 1-20-3w5, is at 5,650 feet and waiting for a control head to make a production test. Mayland Oil Co., LSD 10, Section 17-19-2w5, is resuming drilling at 4,789½ feet after moving back the boilers. At this depth the test is 20 feet in the Home sand of

the Fernie shales, with 2,000 feet of light crude in the hole, but the test will be carried deeper as the main production in this horizon usually comes from the lower sands.

Freehold Oil Corp., SW, Section 3-21-3w5, is reported to have resumed drilling at 2,540 feet, after some weeks' delay replacing the outfit destroyed by fire.

It was reported that Cooper-Nanton Oils, LSD 2, Section 7-20-2w5, shut down for more than a year at 4,840 feet, may resume drilling. Drilling in other parts of the Turner Valley Field has indicated that the test may get the top of a minor fold of the general structure; and if a careful study of drilling logs confirms this supposition, the test may be carried deeper.

In the south end of the field, Mill City Oil Co. is reported to have arranged for development of part of its acreage by one of the larger operating companies. The acreage is adjacent to that surrounding the old Record well in LSD 15, Section 4-19-2w5, which was taken over some time ago by Dutch American Oils, Ltd.

Sterling-Pacific Oils has cellar dug and derrick timbers on the ground for a test in LSD 15, Section 33-18-2w5. Location was made by S. J. Davies, geologist, of Calgary.

Highwood District

In the Highwood district, Imperial's No. 1 Highwood, LSD 3, Section 36-18-3w5, is drilling in the lower Fernie shales at 3,850 feet. An oil showing was met in the Dalhousie sand, but no commercial production; at the present depth the formation is flattening out, indicating that more favorable conditions for production will be met in the deep lime.

On the Rickert structure, Bow River Forest Reserve, Turner Oil Co. of Calgary is reported to have spudded in.

In the Death Valley district, west of Kew, Norcon Oil Co. is rigging up a diamond drill outfit for its No. 2. No. 1 in the Morley Reserve district is shut down.

A geological party representing American interests and headed by S. H. Birdseye, geologist, is reported examining oil structures in the Battle River area of eastern Alberta, between Coronation and Hardisty. A monoplane is being used to take photographs.

Hudson's Bay-Marland Oil Co. held a directors' meeting at Winnipeg recently when James A. Richardson was elected vice president and director. D. J. Moran of Ponca City, Okla., is president. It was announced that the comprehensive geological survey of the Canadian West started some years ago has been practically completed, and indicates good possibilities of oil in a number of areas. Hudson's Bay-Marland Oil Co. has one deep test drilling in the Viking gas field, and it is understood further drilling may be undertaken this year in other areas. Glen M. Ruby of Edmonton, general manager, left recently for a trip to Oklahoma.

In Pincher Creek district, southwestern Alberta, Alberta Gas & Fuel Co.'s No. 3 Doherty, Section 11-6-2w5, is reported drilling below 1,800 feet. The company is core drilling in the vicinity of Waterton Lakes Park.

In the Wainwright Field, east-central Alberta, Sasko-Wainwright Oil & Gas Co.'s No. 1, LSD 1, Section 19-45-6w4, has been standing cemented in a highly saturated oil sand at 2,242 feet, waiting for a new 3-inch drill stem. It will be drilled into production next week. Wainwell Oils' No. 3, LSD 9, Section 36-33-7w4, is being given a production test. Wainwell Oils' refinery, close to the producing wells, is handling heavy crude deliveries from British Petroleum's No. 3-B and Edmonton-Wainwright Oils' No. 1 in addition to the Wainwell Oils' crude output.

On the Ribstone-Blackfoot structure, eastern Alberta, Meridian Oils' No. 1, LSD 1, Section 16-45-1w4, struck a gas flow estimated at 30,000,000 feet a day. Victor Oil Co. of Vancouver, British Columbia, has secured 600 acres near the London-Ribstone well, covering 15 subdivisions in Section 30-43-3w4, and will start a test in the spring. The president is Col. A. C. D. Pigott; managing director, A. H. Mitchell; secretary-treasurer, J. M. C. Findlay; J. J. Rutledge and W. McMillan, all of Vancouver.

In Ontario, Ajax Oil & Gas Co.'s No. 3 on the Jubenville farm, Dover East Township, Kent County, has been tested by B. D. Burn of the Ontario mines department, indicating 1,044,000 feet a day with 900 pounds pressure. The producing horizon is in the Trenton limetsone at 3,175 feet. Ajax Oil & Gas Co.'s No. 2 is reported on the pump and producing some oil from the Trenton; a settled production of 10 bbls. a day is claimed, with some gas.

CALIFORNIA FIELDS

(Continued from Page 60)

15 days. The new well added was the Shell Oil Co.'s No. 24 Edison, which came in under a natural flow doing 2,840 bbls. of clean 30.8 gravity oil daily from 7,318 feet. This well showed plenty of kick previous to completion and required the use of extremely heavy mud to prevent a premature blow out. It is flowing under a pressure of 470 pounds on the tubing. Completions in the Ventura Avenue Field during the past 60 days have not been as numerous but operators will probably make up for lost time as there are 43 strings in operation. The Shell and Associated are both engaged in a rather comprehensive drilling campaign, although no attempt is being made to unduly stimulate production. The former is working on 16 wells, compared with 15 by the latter. The Pacific Western Oil Co. should finish six new producers within 60 days, two of which, No. 11 Orton and No. 4 Willett, should be completed within four weeks. The Bolsa Chica Oil Co. expects to have No. 2 Hartman tanking oil within 15 days and preparations are being made to land the oil string around 7,050 feet. The General Petroleum is also expected to increase its production due to the anticipated completion of No. 12 Notten, which is rotating at 6,749 feet.

Kettleman Hills

The substantial sustained production of the Milham Exploration Co.'s No. 1 Elliott in the recently discovered Kettleman Hills Field of Kings County has proven a powerful incentive for immediate additional work and several operators are each starting three or four new wells. The Standard, which owns every alternate square mile in fee, having acquired this acreage from the Pacific Oil Co., has two wells under way with the derricks for two more in construction. The Standard's quartet are No. 8 in Section 1, No. 41 in Section 3 and Nos. 61 and 81 in Section 11. Nos. 8 and 81 are already drilling ahead. The Marland Oil Co. is making preparations to drill two wells immediately and spud will probably be made within a few weeks. Derrick construction has started for No. 2 Elliott in Section 12-22-17 and a read is being constructed to No. 3 Elliott, staked in Section 2-22-17. The Milham Exploration, discoverer of the productive north dome in the Kettleman Hills, has spudded in No. 2 Elliott in Section 2-42-17 and No. 1 Beal, in Section 34-21-17. George F. Getty has started work and No. 1 Armstrong in Section 4-22-17 will probably be among the earliest completions.

The General Petroleum's No. 2 Oschner has all the earmarks of being the next producer in the Kettleman Hills Field although work has been temporarily delayed because of a caving hole. A string of 6⅝-inch is being run in and it is the intention to land around the 6,550-foot level. This well looks exceptionally promising. The Petroleum Securities has staked location for two new wells and both No. 1 Felix in Section 25-31-17 and No. 1 Beal in Section 14-22-17, will be making hole within 30 days. Road construction to each location is already well under way. The Bolsa Chica Oil Co. started rig construction for its first project, in Section 24-22-17. E. J. Miley is expected to start drilling operations on his No. 1 Maddox about the same time, as rigs are nearing completion. All operators intending to drill wells in the Kettleman Hills Field within a few months are rushing preliminary work to be well under way before rainy weather.

LOUISIANA-ARKANSAS

(Continued from Page 50)

Magnolia Petroleum Co.'s No. 18 Doan-Thigpen is a location 180 feet north and 480 feet west SE cor. SW SE Section 6-20-15 and No. 7 Levee Board is a location 330 feet south and east NW cor. NE NE Section 7-20-15. Shreveport Oil Corp.'s No. 1 Guy and others, Section 32-21-15, set 100 feet of 10-inch and is drilling at 2,000 feet; No. 3 Muslow, Section 32-21-15, plugged back to 1,650 feet and is testing the chalk rock, total depth 3,000 feet. Simplex Oil Co. made location for No. 7 Youree-Randolph 660 feet north and west of center Section 13-20-15.

Greenwood—Loraine Syndicate's No. 1-D Bryson, Section 18-17-16, set 102 feet of 10-inch casing and is drilling at 200 feet.

Lewis—Snake Creek Oil Co. set 10-inch at 65 feet on No. 1 Levee Board, Section 9-21-16.

Pine Island—Dixie Oil Co. is arranging to cement 6⅝-inch at 3,621 feet on No. 91 Dillon, Section 14-21-15; No. 5 Hobbs, Section 21-21-15, is shut down at 1,673 feet; No. 3-B Wells, Section 21-21-15, set 6-inch at 1,500 feet tested dry and is arranging to shoot the formation, total depth 1,745 feet. Magnolia Petroleum Co.'s No. 18 Robertshaw, Section 24-21-15, is waiting for standard rig to pump, total depth 3,794 feet. Thomason and others' No. 7 Muslow, Section 31-21-15, tested dry at 1,650 feet and is drilling at 1,750 feet.

Claiborne Parish

Homer—Oakes and others, No. 1 Richardson, Section 19-21-7, is drilling at 1,150 feet.

Haynesville—Smitherman & McDonald's No. 1 Miller, Section 17-23-8, drilled 6-inch plug and bailed casing, total depth 4,195 feet.

Monroe District

Morehouse Parish—Amalgamated company has rig up for No. 3 Fairly, Section 53-20-4. Natural Gas Products Co.'s No. 22 Crossett, Section 35-21-4. cemented 8-inch at 912 feet and is drilling at 1,200 feet. Southern Carbon Co.'s No. 51 fee, abandoned the hole after a blow out at 850 feet and moved 150 feet east where they are rigging up on second hole; No. 8 Tensas, Section 2-20-4, cemented 12-inch at 185 feet.

Ouachita Parish—Hatcher & Evans' No. 8 Hatcher, in SW NE Section 21-19-4, has set 12-inch at 162 feet. G. E. Jordan is bailing to test No. 1 C. J. Wall, Section 12-18-3, at 2,300 feet, total depth 3,347 feet. Magnolia Petroleum Co. is drilling No. 2 Morrison, Section 2-19-4, at 150 feet. Ouachita Natural Gas Co. set 190 feet of 12½-inch surface pipe and is drilling at 900 feet on No. 5 Lieber, Section 4-19-4. Palmer Corp. began drilling No. 5 fee in Section 24-19-4. United Carbon Co. set 864 feet of 8-inch and is drilling at 1,300 feet on No. 3 fee, Section 6-19-5.

Union Parish—Interstate Natural Gas Co. cemented 8-inch at 847 feet and 6-inch at 2,125 feet on No. 1 Hodges, Section 4-19-3. United Carbon Co. has rig up for No. 1 Nichols, 660 feet south and west NE cor. NW Section 6-20-3.

Richland Parish

Community Oil & Gas Co. is sidetracking drill stem and bit lost at 1,500 feet on No. 1 Bose, Section 33-16-6. Magnolia Petroleum Co. tested dry on No. 2 J. Sartor, Section 16-16-6, at 2,450 feet and will go deeper. Ouachita Natural Gas Co. has rig up for No. 5 Pardue, 660 feet south and east NW cor. Section 5-15-6.

Webster Parish

Cotton Valley—Cotton Valley Syndicate's No. 19 Hope, Section 24-21-10, topped anhydrite at 3,950 feet and is drilling. Magnolia Petroleum Co.'s No. 4 Ira Cix, Section 23-21-10, is in shale at 2,956 feet; No. 1 McCook & Hibbler, Section 22-21-10, cemented 10¾-inch casing at 3,506 feet.

Sarepta-Shongaloo — Magnolia Petroleum Co. cemented 13⅜-inch surface pipe at 300 feet on No. 1 Denman, Section 1-22-11; No. 3 H. M. Branton is a new location 1,320 feet north and 660 feet west SE cor. NE SE Section 6-22-9. Northwest Louisiana Gas Co.'s No. 8 Pine Woods, Section 34-23-11, is drilling at 2,750 feet. Woodman and others have derrick up for No. 1 Boyd, 200 feet south and east NW cor. SE SW Section 3-22-11.

Arkansas

Johnson County

Arkansas Natural Gas Co. is drilling No. 1 McPherson, Section 10-10-24, at 855 feet.

Nevada County

Humble Oil & Refining Co. is waiting for standard rig to pump No. 1-D Graves, Section 6-14-20, total depth 1,158 feet; No. 2 J. Haynie, 660 feet east and north center Section 6-14-20, set 40 feet of 10-inch and is drilling at 850 feet; No. 2 Hain, Section 1-14-21, cored streaks of sand showing salt water from 1,980-2,180 feet.

Ouachita County

Smackover—Phillips Petroleum Co. is waiting for cable tools to drill in No. 7 Johnson, Section 34-15-15, total depth 1,963 feet. Simms Oil Co. is milling out casing at 2,580 feet on No. 11 Hildebrandt, Section 33-15-15, total depth 2,746 feet.

Union County

Champagnolle—O. W. Estes is coring at 2,618 feet on No. 1 Gregory, Section 15-17-14. J. W. Hooser cemented 6⅝-inch casing at 3,212 feet on No. 4 Slade, Section 3-17-14, to test 4 feet of sand, total depth 3,239 feet. H. L. Hunt is arranging for a drill stem test on No. 6 J. D. Gregory, Section 15-17-14, at 3,070-83 feet. E. C. Johnson tested salt water from 2,616-18 feet on No. 3 E. F. Gregory, Section 10-17-14, and is coring at 2,740 feet. Lion Oil Refining Co. has rig up for No. 1 El Dorado Realty Co., 330 feet south and east NW cor. SE SE Section 1-17-13, and is arranging to deepen No. 5 Rowland, Section 15-17-14, from 3,207 feet; No. 5 Union Sawmill, Section 7-17-13, is driling at 3, 592 feet. Magnolia Petroleum Co. has rig up for No. 3 A. Gregory in SE cor. NW SE Section 15-17-14. Marine Oil Co. cemented 6⅝-inch at 3.038 feet on No. 2 Sample, Section 7-17-13, to test 3 feet of sand. Ohio Oil Co.'s No. 3 Carroll, Section 6-17-13, is drilling at 2,718 feet; No. 2 Frazier, Section 6-17-13, is a derrick; No. 4 Nash Account 1, in the same section, is coring at 3,008 feet; No. 1 Nash Account 3, in the same section, was junked at 2.935 feet, skidded 20 feet south and is drilling second hole. Oilwell Corp.'s No. 2-A Kelly, Section 9-17-14, is testing from 2,257-3,305 feet. Olson Brothers' No. 1 Kelly, Section 9-17-14, cemented 6⅝-inch at 2,794 feet total depth 2,806 feet. Pure Oil Co. made a drill stem test from 3,060-83 feet on No. 6 W. E. Gregory, Section 15-17-14, that filled up 28 fourbles with oil and salt water, total depth 2,118 feet; No. 1 Nash Section 7-17-13, tested at 3,030-46 feet and got oil and salt water and is coring at 3,048 feet. Rovenger Oil Corp.'s No. 1-B Perdue, Section 9-17-14, is bailing to test 31 feet of broken sand, total depth 2.804 feet. Rushing and others cemented 3,198 feet of 6⅝-inch casing to test 3 feet of sand, total depth 3.201 feet. Skelly Oil Co. tested dry at 3,193–3,225 feet on No. 1 J. M. Gregory, Section 15-17-14, and is coring at 3,271 feet.

El Dorado—Gulf Refining Co. is cleaning out No. 1 Woodley, Section 6-18-14, total depth 3,143 feet, to go deeper. Louisiana Iron & Supply Co. is waiting for cable tools to drill in No. 10 Fitzgerald, Section 8-18-15, total depth 2,142 feet.

East Texas

Panola County

Eureka Natural Gas Co.'s No. 1 Becknell, in the Elijah Williams Survey, is drilling at 2,500 feet; No. 1 Gulley, James Matthews Survey, tested dry at 960 and 972 feet, salt water at 994 feet and is drilling at 1,200 feet. S. H. Gardner cemented 6⅝-inch at 2,585 feet on No. 4 Brumble in the B. C. Jordan Survey, and 10-inch at 60 feet and 6-inch at 2,582 feet on No. 1 Lawless, in the J. L. Matthews Survey. Magnolia Petroleum Co. cored lime and shale at 2,563 feet on No. 13 Steele in the B. C. Jordan Survey. Nemours Corp. set 62 feet of 10-inch and is drilling at 780 feet on No. 1 Lawless in the L. Chisholm Survey.

SOUTHWEST TEXAS

(Continued from Page 53)

Gulf Production Co.'s No. 7 Connally is drilling at 781 feet.

Luling Oil & Gas Co.'s No. 3 Carter at 2,918 feet, previously reported abandoned will pull casing and plug back to test chalk.

Humble Oil & Refining Co.'s No. 3 J. J. Davis is spudding in.

Humble Oil & Refining Co.'s No. 3 J. B. Tiller is location.

Humble Oil & Refining Co.'s No. 4 J. B. Tiller is location.

Humble Oil & Refining Co.'s No. 3 William Smith has set surface casing at 45 feet.

Lutex Oil Inc.'s No. 5 W. F. Davis, A. Floyd Survey, 300 feet southwest of No. 2, is drilling at 513 feet.

Linderman-Atlantic's No. A-2 W. F. Davis, A. Floyd Survey, 150 feet to southwest and southeast lines of A-lease, is drilling at 2,150 feet in Taylor marl.

S. M. Oil Co.'s No. 1 L. H. Linch, Dorothy Benton Survey, is location 300 feet to south and west lines, is drilling at 1,700 feet.

C. E. Ellzey's No. 1 Taylor, southeast of Luling, has set 42 feet of surface casing.

Goliad County

Booth McCarson's No. 1 H. L. Murray, Goliad Survey, is location 200 feet to west line and 150 feet to south line.

Gonzales County

The Texas Company's No. 1 J. E. Lamkin, Winslow Turner Survey, is location 200 feet to northeast lines and 800 feet southeast of southwest corner.

Jim Hogg County

Randado Oil Corp.'s No. 29 Palacious, Survey 291, Block 14, has set casing at 1,273 feet to test sand.

Randado Oil Corp.'s No. 30 Palacious, Survey 291, Block 3, has sand and set casing at 1,297 feet.

Brooklyn Oil Co.'s No. 2 Garza, Alworth Field, Survey 40, Block 16, is location 150 feet to northeast and northwest lines.

Webb County

O. W. Killam's No. 33 Bruni, Block 64, Albercas Field, is drilling at 700 feet.

A. M. Major's No. 1 Holbien, Block 6, Hogg Ridge Subdivision, Share 3, Las Animas Grant, is location 150 feet to north and east lines.

L. W. Nelson's No. 1 Moglia, Survey 672, is location 150 feet to east line and 2,584 feet to south line.

O. W. Killam's No. 1 Bruni, Survey 5, Block 2, Bruni Subdivision, Ariano Arispe Grant, 150 feet to northwest and northeast lines, is rigging up.

W. F. Morgan's No. 1 Benavides, NE SW Survey 683, located 150 feet to south and west lines, is moving on.

Union Exploration Co.'s No. 1 Benavides, Survey 694, Block 3, 150 feet to south and west lines, is rigging up.

Zapata County

O. W. Killam's No. 10 Cuellar, Jennings Field, 405 feet to southeast lines and 520 feet to southwest lines, is drilling at 1,100 feet.

O. W. Killam's No. 11 Cuellar, same field, 1,095 feet to southwest lines and 160 feet to southeast lines, is drilling at 1,430 feet.

Simms Gas Field—Duval

Simms Oil Co.'s No. 3 Dinn, Survey 62, located 660 feet to north and east lines, is drilling at 500 feet.

Humble-Reiter-Foster Field

Humble Oil & Refining Co.'s No. 12 Kohler, (Reiter-Foster) Survey 403, located 1,485 feet to south line and 165 feet to east line, is ready to spud in; No. 13 Kohler, Survey 163, located 495 feet to east line and 165 feet to south line, is ready to spud in.

Driscoll Pool

Robert Driscoll's No. 13 Driscoll, Survey 448, located 2,100 feet to east line and 900 feet to south line, at 2,464-74 feet, tested gas on drill stem test.

Schoolfield-O'Byrne Field

Magnolia Petroleum Co.'s No. B-3 Hahl, Survey 61, located 3,081 feet to east line and 150 feet to south line, is coring for sand at 2,300 feet. Sun Oil Co.'s No. 2 W. P. Norton, Survey 250, Block 10, located 450 feet to east line and 150 feet to south line, has sand at 2,318-30 feet and is testing; No. 2 Henne-Winch, Survey 250, Block 20, located 150 feet to north and west lines, is drilling at 1,200 feet. S. & O Oil Co.'s No. 1 Hahl, Survey 250, Block 23, located 220 feet to north line and 420 feet to west line, is testing sand at 2,316 feet; No. 2 Bowe, Survey 250, Block 21, located 220 feet to east line and 660 feet to south line, has derrick up. Onyx Oil Co.'s No. 3 Krauter, Survey 250, Block 20, located 450 feet to north line and 150 feet to east line, has been spudded in. The Texas Company's No. 2 Hahl, Survey 250, Block 18, located 450 feet to north line and 150 feet to west line, is drilling at 2,300 feet.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 41 Merchants State Bank, Survey 155, located 150 feet to north and east lines, is drilling at 2,730 feet. Randado Oil Corp.'s No. 27 Palacious, Survey 291, is drilling at 1,100 feet.

Reiser Field—Webb

Marts & Beavens' No. 2 Johnson, Survey 602, Block 11, located 550 feet to west line and 250 feet to north line, is moving on. W. O. Wheatley's (R. C. Holsworth) No. 1 Wheatley, Survey 1,569, Block 3, located 847.7 feet to north line and 305.2 feet to east line, is drilling at 2,510 feet. Cosner-Danmier's No. 1 D. Benavides, Survey 11, Block 6, located 150 feet to northeast lines and 350 feet to southeast lines, is drilling at 1,300 feet.

Albercas Field

O. W. Killam's No. 31 Bruni, Block 64, located 2,456 feet to south line and 1,390 feet to west line, has sand at 2,206-09 feet. Sun Oil Co.'s No. A-12 Yeager-Strohman, Share 5, located 4,675 feet to north line and 150 feet to west line, is drilling at 1,000 feet; No. A-13 Yeager-Strohman, Share 5, located 4,975 feet to north line and 150 feet to west line, has derrick up. Magnolia Petroleum Co.'s No. 13 Yeager-Strohman, Share 5, located 150 feet to west line and 750 feet to south line, is drilling at 4,030 feet; No. 14 Yeager-Strohman, Share 5, located 900 feet to north line and 575 feet to east line, has derrick up; No. 15 Yeager-Strohman, Share 5, located 1,400 feet to north line and 575 feet to east line, has derrick is up. Ryeade Oil Corp.'s No. 8 Yeager-Strohman, Share 5, located 1,950 feet to north line and 150 feet to east line, is drilling at 1,866 feet; No. 9 Yeager-Strohman, Share 5, located 2,250 feet to north line and 150 feet to east line, has sand at 2,145 feet and set casing at 2,137 feet.

Aviator or Bruni Tracts

The Texas Company's No. 1 Bruni, Block 74, located 510 feet to east line and 2,490 feet to south line, has sand at 1,915-18 feet showing salt water and is now drilling at 1,960 feet.

Carolina-Texas Pool

C. R. Miller's (Miller-Daniels) No. 1 de la Garza, Survey 48, Block 47, located 150 feet to north and east lines, is testing at 2,245-58 feet. W. R. Shankle's No. 1 Webster, NW SE Survey 684, located 150 feet to south and west lines, is drilling at 1,600 feet. Foster Barnsley's No. 1 Webster, NE SW Survey 684, located 510 feet to north line and 150 feet to east line, is drilling at 2,125 feet. Barnsley-Scharf-Kirk's No. 2 de la Garza, Survey 335, Block 21, located 200 feet to north line and 150 feet to east line, is drilling at 1,470 feet.

Magnolia-Cole Field

Houston Oil Co.'s No. D-4 Benavides, Survey 753, Block 13, is location 160 feet to south line and 822.5 feet to east line; No. 17-D Benavides, Survey 753, Block 5, is location 160 feet to south and west lines. Magnolia Petroleum Co.'s No. 1 Benavides, SE SW Survey 660, located 150 feet to south and west lines, has derrick up; No. 1 Benavides, Survey 697, Block 10, is location 150 feet to north and east lines. Cole Petroleum Co.'s No. 66 Benavides, Survey 412, Block 4, located 631 feet to east line and 160 feet to north line, has sand at 2,316-24 feet.

Jennings Field—Zapata

O. W. Killam's No. 9 Cuellar, Cerrito Blanco Grant, 643 feet to southwest lines and 703 feet to southeast lines, has sand at 1,462 feet. Charles L. McCaslin's No. 1 R. Cuellar, Survey 278, located 3,260 feet to east line and 3,578 feet to north line, has sand and shale at 1,321-47 feet; No. 1 R. Hinnant, Survey 74, located 2,390 feet to west line and 630 feet to south line, has derrick up. South Texas Production Co.'s No. 3 Jennings, Cerrito Blanco Grant, 9,377 feet to southeast lines and 9,710 feet to southwest lines, is rigging up.

Cole Gas Field

O. W. Killam's No. 1 Bruni, Survey 9, located 1,700 feet to northwest lines and 700 feet to northeast lines, is drilling at 500 feet.

Charco-Redondo Pool

W. R. Duke's No. 3 Martinez, Block 22, W. R. Duke Subdivision, 1,300 feet to northwest lines and 840 feet to northeast lines, is moving on.

Mirando Valley Field

O. W. Killam's No. 1-A R. Lopez, Survey 113, Block 5, located 250 feet to west line and 340 feet to north line, is drilling at 800 feet, rig skidded over few feet from No. 1 which twisted off at 1,440 feet.

Yoast Field—Bastrop

Atlantic Oil Producing Co.'s No. 2 A. M. Yoast, A. Garcia Survey, 1,950 feet to northwest lines and 150 feet to southeast lines, is testing serpentine at 1,330-1,467 feet. Judge Batt's No. 1 White is drilling at 1,000 feet. E. B. Germany's No. 1 Stork, H. Stewart Survey, is rigging up. Gulf Production Co.'s No. 1 A. M. Yoast, A. Garcia Survey, 1,593 feet to northwest lines and 150 feet to northeast lines, is location. Sun Oil Co.'s No. 1 Yoast, A. Garcia Survey, 1,650 feet to northwest lines and 150 feet to northeast lines, is fishing at 1,328 feet. The Texas Company's No. 1 A. Yoast, A Garcia Survey, 450 feet to southwest lines and 150 feet to northewest lines, has set casing above serpentine.

Bruner (Salt Flats) Field—Caldwell

Pat Armstrong's No. 1 E. Martin, A. Floyd Survey, 150 feet to northeast lines and 410 feet to southeast lines, is standing at 2,850 feet. Tip De Arman's No. 1 R. W. Carter, G. Hinds Survey, 120 feet to west line and 148 feet to north line, at 1,250 feet cratered and gas is still running wild. J. S. Abercrombie Oil Co.'s No. 2 Lida Moses, A. Floyd Survey, 450 feet to west line and 150 feet to north line, is drilling in at 2,733 feet; No. 5 Lida Moses, A. Floyd Survey, 150 feet to south and west lines, is in Edwards at 2,721 feet and setting casing. Brawn and others' (Chief of Police Miller) No. 1 R. W. Carter, G. Hinds Survey, 150 feet to south and west lines, is running liner at 2,679 feet. Cranfill & Reynolds' No. 1 S. Smith, A. Floyd Survey, 150 feet to south and west lines, is in Edwards at 2,685 feet. D. F. Bryan's No. 1 Davis, G. Hinds Survey, is location. Golden West Oil Co.'s No. 2 Cora Malone, A. Floyd Survey, 50 feet southeast of No. 1, is skidding rig over from No. 1; No. 1 Cook, A. Floyd Survey, 480 feet to northeast lines and 170 feet to northwest lines, at 2,701 feet has set liner and is flowing a little oil; No. 1 Wilson, A. Floyd Survey, 150 feet to northwest and southwest lines, is in Edwards at 2,692 feet, set liner and is flowing some oil; No. 6 Wilson, A. Floyd Survey, 300 feet southeast of No. 4, is drilling at 2,680 feet. Gulf Production Co.'s No. 3 W. L. Smith, 300 feet north of No. 1, is in Edwards at 2,702 feet, topped 2,691 feet; No. 4 W. L. Smith, 300 feet north of No. 3, at 2,706 feet is waiting on cement; No. 5 W. L. Smith, 300 feet north of No. 4, is in Dobie at 2,680 feet and set casing at 2,675 feet; No. 6 W. L. Smith, 300 feet north of No. 5, is drilling at 2,107 feet in shale; No. 7 W. L. Smith, 300 feet north of No. 6, has derrick up; No. 8 W. L. Smith, A. Floyd Survey, is drilling at 1,394 feet in shale; No. 1 Connally, A. Floyd Survey, 150 feet to south and west lines, is at 2,264 feet. Guerrin & Gastor's No. 1 Davilla, Isaac Weldon Survey, SE corner, is location. Humble Oil & Refining Co.'s No. 2 Mrs. T. B. Johnson, James Hinds Survey, 600 feet west of No. 1, is skidding rig over from No. 1; No. 1 J. B. Tiller, is in Edwards at 2,711 feet topped 2,701 feet; No. 2 J. B. Tiller is in Edwards at 2,695 feet and set casing at 2,687 feet; No. 1 J. J. Davis, A. Floyd Survey, 150 feet to north line and 453 feet to west line, is drilling at 1,085 feet; No. 2 J. J. Davis is drilling at 1,125 feet; No. 1 W. W. Hickman, Gerren Hinds Survey, 150 feet to north and east lines, has derrick up; No. 1 William Smith, A. Floyd Survey, 150 feet to south and west lines, is at 2,685 feet waiting to drill in; No. 2 W. F. Davis is rigging up to pump at 2,708 feet; No. 2 Floyd Tiller, G. Hinds Survey, is location 150 feet to north and west lines. J. B. Jarmon's No. 1 Carter, G. Hinds Survey in center, is rigged up and standing. C. E. Lange's No. 1 W. P. Walker, G. Hinds Survey, 150 feet to north and west lines, is in Edwards at 2,771 feet on tester showing 15 trebles of water and 5 of oil in 15 minutes and is shut down for orders; No. 2 W. P. Walker, G. Hinds Survey, 150 feet to west line and 214 feet to south line, is standing at 1,500 feet; No. 1 Kate Colding, A. Floyd Survey, 150 feet to northwest lines and 112 feet to northeast lines, is in Taylor marl at 2,212 feet. Lutex Oil Inc.'s No. 6 Davis, A. Floyd Survey, is in Georgetown at 2,763 feet (this is No. 6 instead of No. 5); Linderman & Atlantic's No. A-1 W. F. Davis, A. Floyd Survey, 150 feet to northwest and northeast lines, at 2,830 feet plugged back to 2,730 feet and shot with 300 quarts, is estimated good for 200 bbls. Plum Creek Oil Co.'s (Speer Well oil Co.) No. 1 E. L. Mayton, Hector McNeil Survey, in center of survey, is drilling at 2,450 feet. H. C. Ratcliff and others' No. 1 Cora Malone, A. Floyd Survey, 150 feet to north and west lines, is standing at 2,694 feet. Shell Petroleum Co.'s No. B-1 Carter, G. Hinds Survey, 150 feet to south and west lines, has derrick up; No. 1 Malone is location; No. 2 Malone is drilling at 2,227 feet in Taylor marl; No. 1 William Moses, A. Floyd Survey, 150 feet to south and east lines, is drilling at 2,628 feet in Georgetown and will set liner; No. 2 William Moses, 300 feet north of No. 1, is location; No. 3 W. L. Smith, A. Floyd Survey, 150 feet to south and east lines, is at 2,695 feet deepening to the Edwards; No. 5 William Smith, A. Floyd Survey, 150 feet to north line and 325 feet to east line, is drilling at 2,066 feet; No. 1 Floyd Tiller, G. Hinds Survey, 750 feet to east line and 150 feet to south line, is drilling at 2,255 feet in Taylor marl; No. 2 Floyd Tiller has set 12½-inch casing at 53 feet; No. 1 School Land has set 12½-inch casing at 95 feet; No. 1 Smith, A. Floyd Survey, 150 feet to north and east lines, is drilling at 2,710 feet in Edwards topped 2,704 feet; Sun Oil Co.'s No. 4 Malone, A. Floyd Survey, 1,033 feet to northwest lines and 150 feet to northeast lines, at 2,684 feet in top of Georgetown is swabbing oil, no water. Stover & May's No. 1 Bell, Luling Survey, Block 24, is location 20 feet to north and west lines; No. 1 Edwards, Luling Survey, Block 5, is location in center. The Texas Company's No. 1 Lee Moses, G. Hinds Survey, 150 feet to CWL, is at 2,641 feet waiting on casing; No. 3 Merriweather has derrick up; No. 4 Merriweather, is drilling at 1,200 feet; No. 5 Merriweather has derrick up. M. K. Towns' No. 2 W. W. Hickman, Gerren Hinds Survey, 150 feet to north and west lines, at 2,701 feet is reaming to set casing; No. 3 W. W. Hickman, A. Floyd Survey, 150 feet to CWL is drilling at 2,441 feet.

Lockhart Field

Pat Armstrong's No. 1 Heidenheimer, John R. Miller Survey, 450 feet to north line and 150 feet to east line, is building derrick. Neumann & McIntire's No. 1 J. O. Patton, John R. Miller Survey, 150 feet to north and west lines, at 1,943 feet cored chalk showing considerable oil. The Texas Company's No. B-2 Branyon, John R. Miller Survey, 1,580 feet to west line and 150 feet to south line, has chalk at 1,920 feet showing some oil and is drilling in.

Sullivan Field—Gonzales

Cranfill & Reynolds' No. 1 J. F. Webb, Winslow Turner Survey, south offset to No. 1 Norwood, discovery well, is drilling at 600 feet.

Luling Field—Guadalupe

A. B. A. Oil Co.'s No. 4 Britton Harris

shut down at 1,250 feet. Magnolia Petroleum Co.'s No. 1 M. Schubert is rigging up; No. 2 B. McKean, Harriett Cottle Survey, 150 feet to northwest and southwest lines, is drilling at 2,171 feet.

Kingsville Field—Kleberg

Humble Oil & Refining Co.'s No. 4 Flato, Section 40, Block 10, located 250 feet to east line and 450 feet tto north line, is drilling at 3,872 feet.

Cartwright Field—Live Oak

Houston Oil Co.'s No. A-1 Brown Land and Cattle Co., M. B. Kivlin Grant, is location.

Three Rivers Field

W. J. Walton's No. 3 C. H. Wedding, 300 feet west of the No. 2, is standing at 1,587 feet and will probably deepen.

Agua Dulce Field—Nueces

Agua Dulce Oil & Gas Co.'s No. 1 Sanders, Benton's Pasture, 660 feet to north line and 1,980 feet to west line of Section 35, is rigging up. Alexander & Smith's No. 1 Bowers, Section 47, Richard King Subdivision, 150 feet to south line and 265 feet east of center of tract, is standing at 2,503 feet and may be deepened. Davis, Horn and others' No. 1 Thomas Ragland, Manton & Briggs Subdivision, SW cor. No. 13, is standing at 416 feet. R. & G. Corp.'s No. 1 Ed Allen, Ross Peters Subdivision, Section 6, NW cor. Block 6, is drilling at 3,680 feet.

Saxet Field

Saxet Gas Co.'s No. 5 Dunn is location 1,500 feet southwest of No. 1 Dunn, discovery well of the field.

Refugio Field—Refugio

Houston Gulf Gas Co.'s No. 4 J. M. O'Brien, Survey 4, south central, is rigging up; No. 2 Shelly, Refugio town tracts, has set casing at 3,649 feet; No. 1 Fox, Refugio town tracts, is drilling; No. 3 Fox, Refugio town tracts, center of Lot 4, Block 5, at 3,300 feet had derrick blown down by wind after being capped December 25 after running wild; No. 7 James Agnes Lambert, Refugio town tracts, is drilling at 4,180 feet in line. Mission Drilling Co.'s No. 1 Nellie B. Cummings, NW cor. of tract, has set surface casing at 490 feet. William M. Morgan's No. 1 Rooke, at 3,700 feet has set casing in preparation to drill deeper. William F. Morgan's No. 2 James Agnes Lambert, Tract 8, is shut down at 3,636 feet for repairs. Saxet Gas Co.'s No. 5 Claude Heard, 300 feet south of No. 4, has set casing at 3,709 feet and is in sand showing oil. Union Exploration Co.'s No. 1 Holmes Heard, Tract 3, Block 8, 150 feet to south and east lines, has set casing at 3,695 feet and has sand showing oil; No. 1 Leslie Afkins, Block 8, located 150 feet to south and east lines, is reaming and coring at 3,567 feet.

SOUTHWEST WILDCATS

(Continued from Page 53)

the depth of the Carson's No. 5-D yet, which is producing at about 2,600 feet. The territory, however, is looking better than at any time.

The old Reiser gas area in Webb County, around which wildcatters have been trying to find oil, also got some encouragement last week when W. O. Wheatley's No. 1 fee found a sand at 2,242-48 feet that tested a little gas. It is drilling below that now.

In southwestern Uvalde County, Pure Oil Co., which recently abandoned its No. 1 Smythe, got enough encouragement to start No. 2 Smythe and it was spudded in last week 1,920 feet south and 265 feet east of No. 1.

Humble Oil & Refining Co. is starting No. 2 Oppenheimer in Bexar County, south of San Antonio. The rig put over the test is about the biggest ever brought to this territory and is taken as an indication to drill deep. The Humble company three years ago blocked territory a mile or more wide and 7 miles long a little south of the city of San Antonio and has drilled a few wells on it, two at the northwest end getting a little gas and the Oppenheimer wells and another at the southwest end of the block. No. 1 Oppenheimer hole was lost comparatively shallow.

Duval County

National Oil Co.'s No. 2 Ball is a location 300 feet to north and west lines of Block 5 of subdivision of Ball Ranch, and magnetometer is being used to check location. Magnolia Petroleum Co.'s No. A-2 Hahl, Survey 51, located 150 feet to south and east lines, is drilling at 4,295 feet. O. Henry Oil Co.'s No. 1 Henry, Block 1,879 of Snodgrass Subdivision in east corner of Mesquite grant, 450 feet to southeast lines and 220 feet to northeast lines, is drilling at 606 feet.

Starr County

The Texas Company's No. 1 Ofelia Resendez, Porcion 69, Block 174, located 150 feet to south and east lines, is drilling at 3,250 feet. Grays & McCardle's No. 1 Hicks & Hicks, Perdernal grant, south porcion, 150 feet to northeast lines and 200 feet to southeast lines, is moving on.

Webb County

Edouard Raymond's No. 1 Schmellzer, Share 2, Galan grant, Brewster pasture, is moving on. G. S. Lumpkin's No. 1 H. Yeager, Porcion 33-34-35, Block 17, Harry L. Fansler Subdivision, is a location 1,170 feet to east line and 150 feet to south line.

Zapata County

National Oil Co.'s No. 1 Don B. Adams, Share 8, center of N half Section 11, Block 4 of Subdivision of Don B. Adams tract, is moving on rig. John Pappas' No. 1 Cuellar, Porcion 33-34, Block 5, has derrick up.

Bastrop County

Gypsy Producing Co.'s No. 1 Lottman estate is shut down at 2,146 feet. Billy Mayfield's No. 2 McColl, Stephen F. Austin Survey, 50 yards west of No. 1, is on rock at 575 feet.

Bexar County

Amelia Balgart's No. 1 Adams, Cortari Survey No. 5, is location in northeast corner. Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, 1,200 feet to east line and 325 feet to south line, is at 1,600 feet in Edwards. Dixie Oil Co.'s No. 1 Medina Irrigation Co., William Miller Survey No. 180, located 1,666 feet to north line and 470 feet to west line, spudded in and shut down. George F. Hinton is making location 2 miles south of Gas Ridge. William M. Morgan's No. 1 E. S. Bridge, 8 miles southeast of San Antonio, is moving in derrick. H. J. Moore's No. 1 Holly R. Ellison T. York Survey, 2,916 feet to east line and 1,500 feet to south line, has moved in rig at 45 feet and resumed drilling.

Blanco County

Robert A. Rodson's No. 1 Glasscock, Survey 50, located 150 feet to CEL, is at 962 feet standing with oil in the hole.

Caldwell County

Fred Adams' No. 1 Burney, Gideon Pace Survey, is standing at 2,802 feet in Edwards. John V. Edwards' No. 1 W. C. Caldwell, Cornelius Crenshaw Survey, 600 feet to south line and 300 feet to east line, is in chalk at 1,570 feet. Gulf Production Co.'s No. 1 Reed, S. Seale Survey, west central part, is drilling at 2,241 feet in chalk topped 2,227 feet. Rogers & Heap's No. 1 F. W. Forrester, Thomas J. Halton Survey, is drilling at 1,200 feet.

Calhoun County

B. F. Thompson's No. 1 Thomas, John P. Tulley Survey, is drilling at 2,390 feet.

Colorado County

National Oil Co.'s No. 1 H. T. Brandt, Freeman Pettus League, is location 150 feet to south line and 1,000 feet west of highway.

Edwards County

McMan Oil & Gas Co.'s No. 1-B Walter Schreiner, H.E.&W.T.R.R. Survey, Section 50, Block F, 330 feet to south and east lines, is fishing at 3,995 feet.

Frio County

Austin Johnson and others' No. 1 Eschenburg, E. Gallagher Survey No. 788, is location 1,250 feet to east line and 1,625 feet to south line. Pilgrim Oil Co.'s No. 2 Blackaller, James Gouley Survey, is shut down at 3,218 feet.

Fayette County

Marshall & Moore's No. 1 John A. Kerr, M. Muldoon League No. 5, about 250 varas to north line and little west of center, is standing at 2,078 feet. National Oil Co.'s No. 1 J. C. Melcher, S. M. Williams League No. 1, 300 feet to north and east lines, is drilling. R. E. Phalon's No. 1 Cervenka, Fayette County School Lands, is drilling at 2,782 feet.

Goliad County

J. E. Alexander's No. 1 Bergman, Goliad Survey, Block 30, located 250 feet to west line and 950 feet to south line, is shut down at 600 feet. McCarson and others' No. 1 Flake, Goliad Survey, has been spudded in. Southern Crude Oil Purchasing Co.'s No. 1 J. E. Pettus, near Cabeza Creek, is preparing to make test at 3,160 feet.

Gonzales County

Alexander & Smith's No. 1 Billings, G. Gwinn Survey, is location in northwest corner. Joe Bruner's No. 1 Miller, Richard Heath Survey, 3,040 feet to north line and 200 feet to east line, is shut down for repairs. W. D. Flynn's No. 1 Wilhausen, S. Bateman Survey, is at 4,800 feet and moving in heavier rig to go 6,000 feet. L. P. Unkel's No. 1 Lumm & Bouldin, R. Ward Survey, Block 10, is moving in heavier rig at 380 feet.

Guadalupe County

Pat Armstrong's No. 1 Halm, Wakefield Survey, has derrick up. G. A. Greene's No. 1 B. B. Dix, Ira Nash Survey, 610 feet north of road and 320 feet to east line, is drilling at 28 feet. J. J. Christie's No. 1 Taylor Thomas, Gustavus Chotwell Survey, 1,100 feet to southwest lines and 1,130 feet to southeast lines, at 1,053 feet is having casing hauled out and will test and make test of oil and gas showings found in chalk topped 907 feet. Miller Brothers' No. 1 Gib Springs, E. Cortari Survey, 450 feet to west lines and 775 feet to south lines, is drilling at 800 feet.

Hays County

Estess-Moore & King's No. 1 C. N. Sledge, Hunton & Jones Survey, 285 feet to northwest lines of farm, is standing at 804 feet.

Jackson County

J. B. Douglas' No. 1 C. O. Lowrance, John McHenry Survey, 720 varas to northwest lines and 3,700 varas to southwest lines, is shut down at 3,020 feet. The Texas Company's No. 1 W. C. Moore, I.&G.N. Survey No. 208, located 5,108 feet to south line and 150 feet to west line, is drilling at 2,925 feet. Wright Brothers' No. 2 Classen is down around 3,300 feet; No. 6 Drushell is being deepened.

Karnes County

W. E. Hewitt's No. 1 W. E. Porter, 6 miles south of Runge, has been spudded in.

Kinney County

Mardon Oil Co.'s No. 1 Jim Clamp, Survey 346, Section 1,492, is drilling at 2,135 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 2 Indio Ranch, Survey 7, is at 1,320 feet total depth. Rycade Oil Corp.'s No. 3 Chittim, Section 116, Block 7, is drilling 210 feet; No. 3 Sullivan, Section 71, Block 7, at 5,125 feet is showing about 2,000,000 feet of gas saturated with oil.

Medina County

California-Medina's No. 1 Rothe, Survey 102, is fishing at 3,278 feet. Donaldson Oil Development Co.'s No. 1 Adams, Survey 25, located 160 feet to east line and 1,227 feet to south line, at 1,870 feet showed considerable gas, but not enough to warrant completing and has resumed drilling. Ferguson and others' No. 2 Odom, H. Castro Survey, is drilling at 200 feet. Lynch and others' No. 1 Mott is drilling at 300 feet. North & South Development Co.'s No. 1 Charles Nehr, Survey 441, located 150 feet to south line and 7,479 feet to east line, is drilling at 2,941 feet in base of Glenrose.

Nueces County

Nueces River Basin Development Co.'s No. 1 Allen, G. Farrier Survey, 1,596 feet to south line and 474 feet to west line, is shut down at 2,908 feet.

Refugio County

Blanco Creek Oil Co.'s No. 1 St. John, J. Scott Survey, 708 feet to northwest lines and 3,074 feet to northeast lines, is drilling at 1,657 feet. Dunlap & Wilkinson's No. 1 Rooke, 10 miles south of Refugio Field, is standing at 2,750 feet. J. M. Davis and Tom Horn's No. 1 Howard, Section 8, located 600 feet to north line and 2,640 feet to east line, is at 1,957 feet waiting on drill stem. Magnolia Petroleum Co.'s No. 1 Glenewinkle, J. Scott Survey, 330 feet to south and east lines, is drilling at 1,450 feet.

San Patricio County

C. I. Albertson's No. 1 Boscamp, W. R. Hazen Survey, Block 10, located 200 feet to CNL, is shut down at 1,420 feet. George B. Pickett's No. 1 Whitworth, NW NW, Section 60, is shut down at 3,250 feet.

Travis County

Flynn Brothers' No. 1 St. Edwards University is drilling with spudding machine.

Victoria County

Houston Oil Co.'s No. 2 Dr. Allen Kyle, near Nursery, is drilling at 860 feet.

LA.-ARK. WILDCATS

(Continued from Page 50)

Gas Co. with W. W. Gary of Vicksburg president, R. L. Gay, vice president, and L. M. Emlet secretary-treasurer, the company sold a half interest in its 400 acres of Bowman-Hicks leases to Vicksburg interests and location has been made in Section 11-7-14, for a well. The acreage involved is said to be part of that retained by L. M. Emlet when he left the Cook interests for whom he had been drilling in the Zwolle area for several years and was succeeded by Gay, who will continue to handle Cook's affairs.

R. O. Roy's No. 1 Sample in Section 1-13-14, the last of the locations he made on a block of 13,000 acres in Township 13, Ranges 13 and 14 last summer to get under way, began drilling this week. Of the other two, one on the Fuller land was a 2,000,000-foot gasser and the other a failure on the Whitaker after it had missed the gas in the Fuller. Benedum & Trees Oil Co.'s No. 1 State in Section 22-14-12, which went dead after making 25,000,000 feet of gas for a day or two, also is active again, drilling a few feet below where it got the gas at 2,630 feet.

Magna Production Co.'s No. 2 El Dorado Realty Co. in the NW cor. SW, Section 8-17-13, a quarter of a mile east of its No. 1 producer, like the Lion Oil Refining Co.'s No. 5 Nash in the SW cor. NW NE, Section 7, a half mile northwest, appears to be beyond production in the eastern extension of Champagnolle. It was shut down at 3,288 feet after failing to find anything after a drill stem showing at 3,077 feet. The Lion well was dry at the same depth and tested salt water at 3,283 and 3,368 feet. It is drilling now below 3,592 feet.

Test of Wallace and others' No. 1 Ashley in Section 15-16-10, Bienville Parish, is attracting more or less attention. On drill stem test during the week it showed for 5,000,000 feet of gas from 20 feet of broken formation, total depth 2,005 feet and set casing. It is in the locality of older wells on Lake Bisteneau.

Mississippi

Amory Petroleum Co., which completed Mississippi's first commercial gas well on the Carter farm, Section 7-13-17, in Monroe County in 1926, will drill another well 500 feet north, production from the discovery having become insufficient to supply the town of Amory. Arrangements are also under way, it is reported for another well to be drilled for Park Bowser and others of Parkersburg, W. Va., 8 miles north of the discovery well. Amory Petroleum Co.'s No. 1 Bourland, Section 2-13-19, Monroe County, has been cleaned out and 8¼-inch casing reset at 1,529 feet. Arkansas Natural Gas Co., straightreaming No. 1 Rye, Section 22-15-17, Monroe County, has about 100 feet to go before beginning to make more hole, total depth 2,724 feet. This was the second well to produce gas in commercial quantities but was lost when salt water broke in. It will go 4,000 to 4,500 feet.

Atlantic Oil Producing Co. got 40 feet of 20-inch conductor set on No. 1 Houston, Section 30-11-6, Sharkey County, to cut off surface water and expects to start drilling before the end of the week, planning to set 12½-inch at 800 feet.

John Ganzell and Lion Oil Refining Co. are reported to have made a deal whereby the latter gets a half interest

and 830,000 for a 5,000-foot well, probably in Section 2-4-1e, Rankin County. Ganzell's block is about 5 miles south of Jackson and on the south flank of the Jackson anticline. Arkansas Natural Gas Corp., Standard Oil Co. and Pure Oil Co. are also reported to have taken protection around the well.

Trinity Oil Corp. has a block of 15,000 acres on a magnetic high around the town of Velma in Yalobusha County and also a block around the Atlantic Oil Producing Co.'s Houston leases in Sharkey County. Robinson & Greer of Shreveport have 40,000 acres on the Hatchitigbee anticline in southeastern Alabama and are reported figuring on a well in Section 33-10-4, Choctaw County.

North Louisiana

Bienville Parish

W. G. Gray is drilling gumbo at 2,856 feet on No. 1 Johnson, Section 21-18-6, and W. P. Wallace and others tested 5,000,000 feet of gas from 20 feet of broken formation in No. 1 Ashley, Section 15-16-10, total depth 2,005 feet.

Bossier Parish

Arkansas Natural Gas Corp. cemented 363 feet of 12½-inch surface pipe on No. 1 Tidwell, Section 29-22-11, and is drilling below 400 feet. Nell & Lanier began drilling No. 1 Biedenharn, Section 23-21-14, but shut down at less than 100 feet. Woodman and others have derrick up for No. 1 Bollinger, 250 feet north and 450 feet west SE cor. NE, Section 9-22-11.

Caddo Parish

D. C. R. Oil Co.'s No. 1 Hunter Estate, Section 17-19-14, is drilling around 200 feet.

Claiborne Parish

Dixie Oil Co. is fishing for core barrel on No. 1 Gilbert, Section 27-21-5, total depth 4,517 feet.

DeSoto Parish

Benedum & Trees' No. 1 State, Section 22-14-12, is drilling at 2,635 feet. R. O. Roy has begun drilling No. 1 Sample, Section 1-13-14. Thorn Oil Co.'s No. 1 Burford, Section 22-14-14, is drilling at 1,350 feet. Warren & Carruthers' No. 1 Ramsey in Section 33-13-16, is shut down at 2,500 feet.

East Carroll Parish

Palmer Corp. is coring shale and boulders at 2,229 feet on No. 1 Mitchner, Section 8-19-11.

Lincoln Parish

V. E. Shaw and others have location 200 feet north and west SE cor. Section 1-20-3, for No. 1 Voss.

Monroe District

Morehouse Parish—Rainbow Oil Co. has derrick up for No. 1 Louisville Cooperage Co., 990 feet south and east NW cor. NE, Section 33-22-8. Natural Gas Products Co. has derrick up for No. 14 Tensas, 1,980 feet south and 660 feet east NW cor. Section 4-22-4. Phillips and others' No. 1 School fee, Section 16-16-4, is drilling at 3,000 feet.

Union Parish—J. E. Cammattee and others have begun drilling No. 1 Tugwell, Section 21-22-1e, and cemented 12½-inch at 176 feet.

Richland Parish

Richland Operating Co.'s No. 1 Chapman, Section 19-16-7, is drilling at 1,200 feet. Wilson and others have rig up for No. 1 Buie, 600 feet east and 400 feet north SW cor. Section 17-15-7.

Sabine Parish

R. L. Gay cemented 12½-inch at 100 feet on No. 2 Bowman-Hicks, Section 14-7-14, and is drilling No. 1 Sabine Lumber Co., Section 13-7-14, at 1,250 feet.

Arkansas

Bradley County

Ohio Oil Co. is drilling in gumbo at 2,610 feet on No. 2 Southern Lumber Co., Section 19-16-9.

Drew County

Ohio Oil Co. has made location 800 feet north and 85 feet west SE cor. NE. Section 13-15-4, for No. 1 Jerome Lumber Co.

Logan County

Arkansas Natural Gas Co. is underreaming 7-inch casing at 3,058 feet on No. 1 Parks, Section 26-8-24, total depth 3,203 feet.

Ouachita County

J. E. Crosbie's No. 1 Canada, Section 24-15-16, is standing 300 feet in fluid from 57 feet of broken sand and is waiting for standard rig to pump, total depth 2,055 feet. Sam Solar has location in NW cor. SE SW, Section 19-15-15, for No. 1 Langley.

Miller County

E. A. Martin, trustee, is drilling at 2,780 feet on No. 4 Dale, Section 23-15-26.

Nevada County

C. F. Steele has made location in the CWL SE NW, Section 21-14-20, for No. 1 E. W. Groves and set 60 feet of 10-inch.

Union County

Bell and others have set 185 feet of 10-inch on No. 1 Terrell, Section 27-18-14. Calgo Oil Co. is washing to bottom to deepen No. 1 Primm, Section 25-18-15, temporarily abandoned at 3,600 feet. Magna Production Co.'s No. 2 El Dorado Realty Co., Section 8-17-13, is waiting orders at 3,238 feet.

East Texas

Red River County

D. M. Buffington is drilling No. 1 Hoosier in the Ed Hughes Survey at 1,490 feet. Johnson Petroleum Co.'s No. 2 Randolph, Ed Dean Survey, is shut down for orders, total depth 1,440 feet.

Shelby County

Chapparall Oil Co.'s No. 2 Holt, Matthew Moore Survey, drilling at 2,755 feet, is arranging to run core barrel around 2,780 feet. Gulf Refining Co.'s No. 1 Carraway, Aaron Castleberry Survey, is drilling at 1,550 feet.

GULF COAST FIELDS

(Continued from Page 55)

salt water earlier in the week at 3,980-4,020 feet, is standing.

On the north side of the dome, Abercrombie & Harrison's No. 3 Ritter, deep extension test, is drilling gumbo at 4,245 feet. Rio Bravo Oil Co. is starting two more tests on the west flank, these being No. 12-A Settegast and No. 13-A Settegast. Both are rigged up. The latter is on the extreme south of the company's lease in strictly wildcat territory. It is to be offset on the south by Reece Wolfe's No. 1 Herman estate, for which a derrick is up. This is on the tract formerly held by the Humphreys Corp. and is 950 feet from the east line and 50 feet from the north line. Superior Oil Corp.'s No. 4-B Settegast, a wildcat still further south is standing until a new derrick can be built, the other having been blown down in a storm last week. This test is down 3,542 feet. Rio Bravo Oil Co.'s No. 6-A Settegast, an old well being deepened, is being delayed by a caving hole at 4,060 feet, bottom being at 4,192 feet.

Goose Creek—Harris County

Gulf Production Co.'s No. 13 Paddock-Smith is drilling at 2,973 feet. This company's No. 35 Stateland Oil Co. is drilling below 2,533 feet. Humble Oil & Refining Co.'s No. 74 Simms-Smith, wildcat northeast of the field, is drilling sticky shale at 6,459 feet. This company's No. 10 Jones Stateland tested salt water at 2,500 feet and is to be deepened.

Spindletop—Jefferson County

Gulf Production Co.'s No. 17 Marrs McLean is drilling in sandy shale at 5,254 feet. L. A. Painter's No. 2 Gordon is setting casing with the bottom of the hole around 3,847 feet. Yount Lee Oil Co.'s No. 50 McFaddin swabbed salt water at 3,625 feet and probably will be deepened. No. 43 McFaddin is drilling shale at 4,275 feet. No. 53 McFaddin is drilling shale at 4,505 feet. No. 88 McFaddin is waiting on casing cement to set to test sand at 2,451 feet. No. 89 McFaddin is running tubing, the well being unable to flow through casing. Bottom of this hole is around 3,600 feet. No. 90 McFaddin is drilling rock at 2,500 feet. No. 91 McFaddin is drilling sand and lime at 2,700 feet. No. 92 McFaddin is a derrick.

Yount Lee Oil Co.'s No. 2 fee is drilling shale and sand at 3,878 feet, and its No. 1 Davis is in sand and shale at 6,197 feet. This company has set screen in its No. 21 Gladys and will test at 4,100 feet. No. 41 Gladys City is drilling shale and lime at 3,936 feet. No. 73 Gladys City tested dry at 3,051 feet and will be deepened. No. 74 is drilling shale and sand at 2,454 feet.

Hull—Liberty County

Empire Gas & Fuel Co.'s No. 17 Barngrover is standing at 3,774 feet waiting on casing cement to set to test. Gulf Production Co.'s No. 68 Phoenix is being rigged up to pump. No. 92 Phoenix is drilling at 2,798 feet. This company also is building derrick for No. 25 Morris-Phillips. McCon Oil Co. has a rig up for No. 10 Taylor. Republic Production Co.'s No. 25 Dolbear is drilling at 3,612 feet. No. 27 Dolbear is drilling at 2,234 feet.

Liberty—Liberty County

Four more wells were completed in the recently opened shallow sand area on top the South Liberty Dome and as fast as wells are finished the rigs are moved onto new locations which are extending the field northward along the line dividing the leases of the Gulf Production Co. and the Sun Oil Co. The Gulf Production Co. has another test near the sand in its No. 4 Marrs McLean and is rigging up for Nos. 5 and 6, consecutive locations to the north. Sun Oil Co.'s Nos. 24, 26, 27 and 28 Mitchell are in the shallow sand and derricks are up for Nos. 30, 31, 32 and 33 Mitchell. The Texas Company also is starting two more tests on its Staiti lease adjoining the Gulf and Sun tracts on the south. These will be Nos. 18 and 19.

In the wildcat district to the north of the new shallow sand area, and with from present indications will be connected with it, Empire Gas & Fuel Co.'s No. 1 Goggan has started drilling and is down 777 feet. Liberty Petroleum Co.'s No. 2 Turner is standing with casing cemented at 1,490 feet below which a test will be made. Painter Oil Co.'s No. 1 Turner is drilling below 700 feet.

In the north extension of the flank sand production, Sun Oil Co.'s No. 26 Mitchell is down 787 feet. Yount Lee Oil Co. is spudding in on its No. 14 Mitchell.

A mile northwest Vacuum Oil Co. is still rigging up on its No. 1 Trinity River and The Texas Company is ready to start drilling on its No. 3 Pickett.

Raccoon Bend—Austin County

Humble Oil & Refining Co.-Valley Oil Corp.'s No. 1-C (A) Grawunder is drilling sand and boulders at 2,176 feet. No. 2 Hardy is drilling shale at 1,465 feet. No. 2 E. B. Wilson is drilling sandy shale at 602 feet. A rig is up for No. 1 J. W. Wilson and locations are standing for No. 1 Dieutrichs, No. 1 Sherrill, No. 3 Roy Thompson and No. 2 E. Kearns.

DeWalt—Fort Bend County

Humble Oil & Refining Co.'s No. 2 Deatherage is drilling lime at 1,140 feet. No. 1 Nelson is waiting on casing cement to set at 3,034 feet to test and No. 2 Camp is rigged up ready to drill. Locations have been made for Nos. 2, 3 and 4 Brazos farms.

SOUTH LOUISIANA

Jennings—Acadia Parish

F. J. Getty's No. 1 Clemont is drilling gumbo and shale at 2,040 feet. Gulf Refining Co.'s No. 36 Jennings Clemont is rigged up to deepen. Jennings Petroleum Co.'s No. 2 Eunice Crowley has drill stem stuck with the bottom of the hole at 3,680 feet. E. F. Simms' No. 1 Grace Vanschuler is drilling gumbo at 4,540 feet. The Texas Company has abandoned its No. 4 Rayne heirs after drilling to 3,178 feet. This company's No. 107 Latrielle is being rigged up. Yount Lee Oil Co.'s No. 3 Crowley also has been abandoned at a total depth below 5,700 feet. This company's No. 5 Housierre-Latrielle is drilling shale and lime at 5,025 feet.

Hackberry—Cameron Parish

Calcasieu Oil Co.'s No. 12 Watkins, East Hackberry, is sidetracking strainer at 3,908 feet to deepen. This company's No. 1 Breaux has been abandoned in heaving shale at 4,566 feet. The Texas Company's No. 4-B Calcasieu Lake is a location. As this location is in the lake it will be some time before a derrick can be built.

On the old Hackberry Dome to the west, Cameron Oil Co.'s No. 1 Vincent is drilling sandy lime at 2,925 feet. Cherokee Oil Co.'s No. 1 Duhon in the same area is a location. Yount Lee Oil Co.'s No. 1 Perkins is down 975 feet when a string of surface casing has been set. Sutton Seiss & Green's No. 1 Sonnier has started drilling and at latest report was in gravel at 392 feet. These tests are on the south side of the dome where production recently was opened by Cameron Oil Co.'s No. 2 Duhon, which continues to flow around 150 bbls. daily.

On the north side of the dome, Rycade Oil Corp.'s No. 1 Gulf Land has encountered a sandy shale showing oil at a total depth of 4,319 feet and is to set casing to test. Yount Lee Oil Co.'s No. 8 School Land is drilling shale and lime at 4,32[illegible] feet.

Lockport—Calcasieu Parish

Vacuum Oil Co.-Gulf Refining Co. have a rig up to deepen No. 13 Miller, a well formerly completed at 4,405 feet. No. 2 Miller is pulling screen and cleaning hole to deepen. No. 22 Miller, a new test is drilling sandy shale showing some oil at 3,902 feet, and No. 23 Miller, another new test, is in lime rock at 2,153 feet. No. 1 Henshaw-LeMoin is drilling hard sand at 5,434 feet.

Vinton—Calcasieu Parish

Gulf Refining Co.'s No. 47 Star-Vincent is drilling at 3,161 feet. Edgerly Petroleum Co.'s No. 5 Vincent, an old well deepened to 3,764 feet, has been abandoned. Marrs McLean is rigging up for No. 12 Gray. A derrick for this test has been standing nearly a year. Salt Dome Oil Co.'s No. 1 Shaw has set strainer and as the week closed was bailing. Vinton Petroleum Co.'s No. 1 Matilda Gray is drilling at 1,936 feet. This company's No. 10 Vincent is drilling at 2,188 feet.

Edgerly—Calcasieu Parish

Rex Petroleum Co.'s No. 9 Hunter is drilling below 2,425 feet. Drysdale & Savoy's No. 3 Hill is drilling at 3,03[illegible] feet.

MISCELLANEOUS FIELDS

Texas

Rio Bravo Oil Co.'s No. 135 B.B.B.&C. at Saratoga, Hardin County, is drilling sand and shale at 981 feet. Gulf Production Co.'s No. 8 Smith, High Island, Galveston County, is standing at 2,922 feet. Marrs McLean has a derrick up for No. 1-A Cade, a location three-quarters of a mile east of No. 12 Cade, the well which recently caught fire and burned for a week. Sinclair Oil & Gas Co.'s No. 5 Norton, Damon Mound, Brazoria County, is drilling lime rock at 3,727 feet. This company's No. 20 Jackson, same dome, is drilling shale at 3,642 feet. Rycade Oil Corp.-Humble Oil & Refining Co.'s No. 4 Hudson, Markham, Matagorda County, is drilling lime, sand and builders at 931 feet. The Texas Company's No. 22 House, Humble, is drilling shale, lime and boulders at 3,182 feet. This company's No. 14 Koehler, same field, is drilling rock at 1,063 feet. Sun Oil Co.'s No. 1 Kovalcick, North Dayton wildcat, is drilling shale and lime at 4,186 feet.

South Louisiana

Rycade Oil Corp.'s No. 3 Atchafalaya fee, Bayou Bouillon, St. Martin Parish, is drilling shale at 4,283 feet. This company's No. 4 Atchafalaya fee is in salt at 4,265 feet. No. 2 Bouillon fee and No. 4 Bouillon fee, workovers, have set screen to retest, the former at 3,273 feet and the latter at 3,360 feet. At Sorrento, Ascension Parish, Gulf Refining Co. has abandoned its No. 13 United Land Co. at 1,650 feet and a dry hole. Pure Oil Co.'s No. 7 Yount Lee Oil Co. is drilling sandy shale and lime at 4,362 feet. This company's No. 8 Yount Lee Oil Co. is drilling sticky shale at 3,528 feet.

MISCELLANEOUS WILDCATS

Texas

Brazoria County—Shell Petroleum Corp.'s No. 3 Reece, Allen Dome, is drilling hard sand and lime at 2,473 feet. This company's No. 1 Random, same dome, is drilling brittle shale with an odor of oil. No. 5 Allen is drilling sandy shale at 4,319 feet. Empire Gas & Fuel Co.'s No. 2 Brock, Stratton Ridge, is standing rigged up.

Chambers County—Gulf Production Co.'s No. 1 Wilborn, Hankamer, is drilling lime at 3,175 feet. Pure Oil Co.'s No. 2 Lost Lake, Lost Lake Dome, tested salt water with a slight showing of oil in a drill stem test at 2,342 feet, and is

drilling deeper. This company's No. 2 Lost River was abandoned during the week in anhydrite at 3,757 feet.

Colorado County—Humble Oil & Refining Co. has abandoned its No. 1 Brenton, Altair, in shale at 1,204 feet and is starting to drill on No. 1 Byers.

Fort Bend County—South Texas Petroleum Co.'s No. 1 Hartfield, Needville, is drilling gumbo at 4,923 feet. Gulf Production Co.'s No. 10 Trone, Long Point, is drilling gumbo at 613 feet.

Galveston County—Republic Production Co. is changing rigs on its No. 1 Lobit, Dickinson, preparatory to drilling deeper. It has drilled to 3,181 feet in shale and lime.

Harris County—Humble Oil & Refining's No. 1 Minnetex, Mykawa, is drilling hard shale at 5,075 feet. This company's No. 5 Warren at Hockley is down 1,060 feet but is shut down until a new derrick can be built to replace the one destroyed in a storm during the week. Paxton and associates' No. 1 Brubacker, Clodine, is drilling gumbo at 1,124 feet. South Texas Petroleum Co.'s No. 1 Hicks, Almeda, is rigged up.

Jackson County—The Texas Company's No. 1 Moore, north of Edna, is reaming to the bottom at 2,914 feet. It is in shale. Wright Brothers' No. 2 Classen, Edna, is drilling black shale at 3,380 feet.

Jefferson County—Gulf Production Co.'s No. 2 Burrell, Fannette, is drilling out casing plug cemented at 5,600 feet. The Texas Company's No. 1 Pipkin, Big Hill, is drilling hard sand and lime at 3,006 feet. Westbury Syndicate's No. 1 West is drilling gumbo and lime at 2,532 feet.

Liberty County—Humble Oil & Refining Co.'s No. 3 Sterling, Moss Bluff, has been abandoned at 2,956 feet. Union Exploration Co. has abandoned its No. 1 Esperson, Angus McNeel Survey, at 5,800 feet but has made location for No. 2, which will be 3,100 feet north of No. 1.

Matagorda County—Crossland and associates' No. 1 Hawkins, Shepherds Mott, is drilling rock at 2,630 feet.

Orange County—The Texas Company has made location for No. 1 Kuhn on the new dome recently discovered in the southern part of the county in what is known as Duncans Woods.

Washington County—Sun Oil Co.'s No. 1 Witt blew out while drilling at 595 feet, caught fire and burned down the derrick. The well has been killed and a new derrick will be built. Sun's No. 1 Einman is drilling shale at 2,653 feet and No. 1 Marcus is in shale at 3,185 feet. No. 1 F. Grote is drilling shale at 1,250 feet.

South Louisiana

Ascension Parish—Gulf Refining Co.'s No. 13 United Land Co., Sorrento Dome, has been abandoned as dry at 1,650 feet. Big Dome Drilling & Development Co.'s No. 1 Miles is drilling gumbo at 1,132 feet. Other tests in the parish are standing.

Cameron Parish — Shell Petroleum Corp.'s No. 6 Watkins, Black Bayou, is drilling sand at 2,409 feet. A derrick is being built for No. 7. The Texas Company's No. 3-A Calcasieu Lake, Calcasieu Lake Dome, is a location.

Evangeline Parish — Evangeline Oil Co.'s No. 1 Crowell-Spencer, Pine Prairie, is drilling rock at 4,441 feet.

Iberia Parish—Gulf Refining Co.'s No. 3 Fannie Kling, Loreauville, is drilling gumbo at 2,175 feet. No. 1 Moresi is rigging up and No. 8-Z State is starting drilling. Jefferson Lake Oil Co.'s No. 1 Lake Peigneur, Jefferson Island Dome, is drilling below 643 feet.

Iberville Parish—Louisiana Land & Exploration Co.'s No. 3-A Vermillion Bay, is drilling sand at 3,582 feet. Shell Petroleum Corp.'s No. 3 Wilbert, White Castle, is drilling blue shale at 1,390 feet. Standard Oil Co. is building a derrick for No. 2 Wilbert, its second test on the Bayou Blue Dome. This company's No. 1 Schwing has spudded.

Jefferson Davis Parish—Vacuum Oil Co.'s No. 1 J. W. DeVilbiss, a wildcat on the recently checked geophysical dome near Roanoke, has encountered a sandy shale showing oil at 4,188-4,200 feet and is waiting on 9⅝-inch casing to set at 4,176 feet to test.

MUSKEGON FIELDS

(Continued from Page 59)

for the Muskegon Oil Corp., was the third dry hole in the lower formation.

Abandonments

E. L. Robinson's No. 1 Flentje, SE NE Section 9-10-16, was plugged back to the upper Traverse pay sands from the lower Traverse depth and shot but failed to become a producer.

The Muskegon Development and the Mid West Petroleum companies' No. 2 Ludwig Heinz, NE NE Section 9-10-16, was dry at 1,680 feet in the upper Traverse formation.

Two wells in Muskegon Township also were abandoned in the area where other wells have been drowned out with bottom salt water. The Victor-Kooiker Co.'s No. 1 F. Becker, NE SE Section 5-10-16, was abandoned at 1,200 feet. The Puritan Oil Co. and Kelley Goldboss will abandon their No. 1 McLaughlin, SE SE Section 5-10-16, at 1,745 feet with a crooked hole. It will be reopened if the deep drilling test to be started in this vicinity is successful.

The Laketon Oil Co.'s No. 1 Phelps, NW NE Section 1-10-17, Laketon Township, was dry and abandoned at 2,275 feet. Salt water beneath the Dundee pay sand level was struck.

The Paragon Oil Co.'s No. 1 Geboo, SW SE Section 1-10-17, also was dry in the Dundee formation at 2,092 feet.

The Royal Petroleum Co.'s No. 1 Foote, SW SE Section 13-10-17, was abandoned after an injunction against its drilling was granted the city of North Muskegon.

A flow of 3,500,000 feet a day of gas was struck in the Dixie Oil Co.'s No. 2-D Dow, NW SE Section 5-10-16, at 2,054 feet. The dry gas will be cased off and the well completed next week into the oil sands.

The Lilyseu Co.'s No. 1 Trierweiler, NW NW Section 5-10-16, had a show of oil in the lower Traverse pay sands at 1,920 feet.

New Locations

Eight new locations, four in Muskegon Township and four in Laketon Township, were announced during the week. All of the four new locations in Laketon Township are in Section 12, where several large new producers have been brought in during the past two weeks.

The new Laketon locations are as follows: Nelson & Witt's No. 2 Andree, SW SE Section 12-10-17; Carl Damm's No. 1 fee, NE SW Section 12-10-17; Carl Damm's No. 2 fee, NE SE Section 12-10-17; and the Royal Petroleum Co.'s No. 1 Murphy, NE NE Section 12-10-17. Rigs are being moved to all of these locations.

Two of the new locations in Muskegon Township are in that part nearest to recent new large producers. They are: Muskegon Oil Corp.'s No. 1 Yonker, NE NE Section 7-10-16, and the Swastika Oil & Gas Co.'s No. 2 Gilbert, SW SE Section 6-10-16. Rigs are moving in for these wells.

The other two locations in Muskegon Township are: Muskegon Development Co.'s No. 1 Sutherland, SW NE Section 9-10-16, and Howard Brown and others' No. 1 Flanders, NW NE Section 10-10-16. A rig is being moved to the first of these two locations.

Muskegon County Wildcats

Five Muskegon County wildcat wells are to be drilled to the Dundee formation after encountering small shows of oil in the Traverse pay sands considerably lower than the same producing strata in the Muskegon proven field.

Harper & Newman's No. 1 Cook, NE NE Section 2-9-16, was drilling at about 1,950 feet after having slight shows of oil and gas in the Traverse formation.

The Eureka Oil & Gas Co.'s No. 1 Featherstone, SW SW Section 35-11-16, Dalton Township, was drilling at 1,920 feet after a slight show in the Traverse.

The Sun Oil Co.'s No. 1 Grelewicz, SE NE Section 26-11-16, Dalton Township, was drilling at more than 2,030 feet after a good show of oil at 1,810-17 feet in the upper Traverse pay sands. Water was struck at 1,825 feet, however.

The Fink Development Syndicate's No. 1 Nash, SW NW Section 20-9-14, and the Shifting Sands Oil Syndicate's No. 1 fee, SW NW Section 20-11-15, Cedar Creek Township, will be drilled to the Dundee after shows of oil in the upper Traverse pay sands.

The Creek Land Development Co.'s No. 1 Wittels, NE NE Section 34-11-15, Cedar Creek Township, also has been shut down at 1,275 feet.

Two other Muskegon County wildcats are drilling, two have rigs on location, another is rigging and another was completed as a test.

The White River Oil Corp.'s No. 1 Montague well, SW SW Section 21-12-17, is drilling at about 1,200 feet after slight shows of oil. It is in Montague Township.

Rigs are on location or partly so for L. C. Patterson and others' No. 1 Monette, SE SE Section 13-12-15, Holton Township, and P. G. Fendell's No. 1 Gustafson, SE SE Section 19-11-16, Dalton Township.

A rig is reported to be moving to the Charles Lind farm, NE NE Section 15-11-16, also Dalton Township.

One new location was announced for the General Land & Development Co.'s No. 1 W. W. Lamos, NE NW Section 24-12-18, White River Township. This well is being drilled by Benjamin Dick and J. F. Marshant on acreage blocked by C. S. Marston.

One western Michigan wildcat well was drilling in the Traverse formation, another was dry in the Traverse formation, another was shut down with a set of broken jars just above the same formation and a fourth was waiting to be drilled into the upper Traverse pay sands after getting a good show of oil and gas.

Paul Schulte's No. 1 Blanchard, SW SW, Section 30-10-10, Nelson Township, Kent County, was drilling into the Traverse formation at about 2,500 feet.

The Muskegon Oil Corp.'s No. 1 Essenberg-Dreyer, SE SW, Section 13-5-16, Park Township, Ottawa County, was dry in the upper Traverse and drilling at 1,680 feet.

Edward DuVall's No. 2 Carrie Mears, SW NW, Section 31-15-18, Golden Township, Oceana County, was shut down at 1,500 feet with a set of broken jars. It is just above the Traverse formation.

The Lima Oil Corp.'s No. 1 Atwood, SE SW, Section 6-11-13, Ashland Township, Newaygo County, was shut down at 2,087 feet, where a good show of oil and gas was encountered.

Two Oceana County wells were shut down at 500 and 800 feet respectively. Sankey Oil & Gas Co.'s No. 1 Been, NW SE, Section 22-14-15, Newfield Township, and Pennsylvania Oil & Gas Co.'s No. 1 Snow, NW SE, Section 23-15-15, Leavitt Township, Oceana County.

The Kenyon Oil Co.'s No. 1 Gould, NW SW, Section 24-9-10, Courtland Township, Kent County, was drilling at about 800 feet.

Joseph Kluting is the owner of the property SW NW, Section 10-8-13, Wright Township, Ottawa County, to Which Kelley Goldboss has moved a rig for a new wildcat.

The location for the Decem Development Co.'s No. 1 T. Veenstra, SW SE, Section 26-13-15, Greenwood Township, Oceana County, also was announced.

It was reported a rig was being moved to location for the Michigan Central Oil Co.'s No. 1 on the property of Mrs. Ide Nickerson, about 3 miles from Cedar Springs in Kent County.

Lake County Wildcat

A wildcat has been started in the northwest corner of Lake County, about 75 miles north of the Muskegon Field. Fred Estes, independent operator, is drilling at about 300 feet on his No. 1 W. L. Kellogg, NW NW, Section 11, Dover Township, Lake County, the first well to be drilled. The Kellogg lease includes 10,440 acres in the northwest corner of the county. Lake County adjoins Mason County on the east and Newaygo County on the north.

Oil Association Election

E. J. Bouwsma, president of the Reed Oil Co. and director of the test drilling program of the Muskegon Oil Corp. and five associated companies throughout the State, was elected first president of the

1000 feet 11″ hole 40 hours

cost 3 cents per foot

K-P

THE LINE OF LEAST RESISTANCE

STRAIGHT-HOLE Rotary Drilling Bit

—made this speed and low cost record. A 1000 feet of 11″ hole in 40 hours, passing another well by 100 feet that was started 5 days previously, is the record made by the Klingensmith Drilling Company at Pearson Switch, Okla., with three sets of K-P self-sharpening cutters in a K-P *Straight-Hole* Bit. *This thousand feet cost Klingensmith only $30.00 for K-P self-sharpening cutters.* The total footage was made in three round trips.

KENNEDYE-PLUMB CORPORATION

Railway Exchange Building

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Sold by every

"Continental"—"National" —"Oil Well" supply company branch store.

Michigan Oil and Gas Association at the organization meeting held this week in Muskegon. Other officers are: Charles H. Caswell, of the Lima Oil Corp., first vice president; J. T. Norris, of Norris & Smith, Grand Rapids, second vice president; E. C. Shields, of the Joliet-Morris Development Co., of Muskegon, treasurer; and John G. Turner, of the Consolidated and Muskegon Great Lakes Oil companies, of Muskegon, secretary.

The five officers and the following four representatives of some of the larger companies operating in Michigan comprise the board of directors: R. B. Bechtel, of the Dixie Oil Co., subsidiary of the Standard Oil Co. of Indiana; W. F. Wickers, of Saginaw, of the Pure Oil Co.; Oscar Davis, of the Johnson Oil Refining Co., of Chicago; and Guy I. Warren, of the Swastika Oil & Gas Co., also of Chicago.

OKLAHOMA FIELDS

(Continued from Page 48)

Reed, E.	31- 8-7	1	30
Reed, I.	22- 7-6	3	534
Marland & Shaffer:			
Harrison	4- 7-7	1	450
McCulloch & Sands:			
Harrison	4- 7-6	1	18
Mid-Continent:			
Brunner	11- 7-6	4	745
Eleck	23- 7-6	1	55
Smith	5- 7-7	2	3,425
Wadsworth	36- 8-6	7	600
W. B. Pine:			
Hoyecha	26- 8-6	6	2,060
Pine-Phillips:			
Pottie	35- 8-6	2	302
Prairie:			
Chilcoat	25- 8-6	3	440
Dungan	35- 8-6	1	off
Gibson	14- 7-6	5	1,420
Harris	14- 7-6	4	1,010
House	2- 7-6	4	310
Johnson	24- 7-6	1	off
Lustey	5- 7-7	1	45
Moppin	24- 7-6	2	2,170
Talley	14- 7-6	4	1,040
Prairie & Amerada:			
Sunny	14- 7-6	7	3,725
Pure:			
Brinson	24- 7-6	1	847
Cotcha	14- 7-6	10	3,756
Harjo	11- 7-6	4	955
Hollins	11- 7-6	1	352
Reiter-Foster:			
Bunyard	14- 7-6	4	1,175
Shaffer:			
Narcome	36- 8-6	2	110
Shell:			
Caesar	11- 7-6	1	41
Hotulke	23- 7-6	4	387
Jeffries	2- 8-7	1	102
Johnson	13- 7-6	4	2,406
Sinclair:			
Cosar	30- 8-6	3	340
Haney	12- 7-6	1	95
Tewee	14- 7-6	2	1,250
Sinclair & Kingwood:			
Pompey	24- 7-6	1	110
Skelly:			
Carl	14- 7-6	2	2,275
Slick:			
Chilcoke	9- 7-7	1	off
Reed	13- 7-6	2	1,900
Williams	15- 7-6	2	1,165
Wood	26- 7-6	2	320
Slick & Pine:			
Coker	1- 7-6	1	off
Snowden-McSweeney:			
Tiger	13- 7-6	3	862
Superior:			
Potulka	31- 8-6	1	off
Soketheche	1- 7-6	1	off
Texas:			
Brooks	25- 8-6	1	50
Coker	1- 7-6	3	295
Janey	11- 7-6	4	635
Texas & Independent:			
Hotulke	23- 7-6	4	1,400
Hotulke	22- 7-6	1	400
Tidal:			
House	1- 7-6	2	410
Johnson	1- 7-6	1	44
Twin States:			
Lowe	25- 8-6	1	125
Wigdon & Long:			
Jefferson	31- 7-6	1	30
Total		321	93,144

Mission Pool

Carter:			
Fuswa	18- 8-6	1	50
Micco	8- 8-6	1	....
Gypsy:			
Baby	6- 8-6	1	15
Barkus	6- 8-6	2	....
Dosar	7- 8-6	1	377
Hardy	7- 8-6	1	16
Mission	5- 8-6	1	....
Mosar	1- 8-5	1	....
Marland:			
Maines	7- 8-6	1	....
Mid-Kansas:			
Moore	7- 8-6	1	....
Shell & Marland:			
Herndon	7- 8-6	1	....
Shell & Papoose:			
Maines	7- 8-6	1	1
Twin States:			
Hayes	8- 8-6	1	50
Total		14	509

Maud Pool

Amerada:			
Gossland	8- 8-5	1	715
Gravel	1- 8-4	1	off
Hallum	1- 8-4	1	2,510
Barnsdall:			
Coker	11- 8-5	1	1,785
Fife	14- 8-5	1	980
Darby:			
Ketcham	19- 8-5	1	410
Empire:			
Cluck	11- 8-5	1	35
Gypsy:			
Bourassa	7- 8-5	1	off
Coker	10- 8-5	1	250
Miller	18- 8-5	1	532
Independent & Harding:			
Miller	18- 8-5	1	2,520
I. T. I. O.:			
Simpson	10- 8-5	1	301
State	16- 8-5	1	off
Phillips et al:			
Hudson	19- 8-5	1	849
Pure:			
Lindly	18- 8-5	3	3,942
Urbansky	19- 8-5	1	....
Prairie:			
Billington	11- 8-5	2	1,515
Campbell	18- 8-5	2	2,975
Mitchell	15- 8-6	1	5
Sinclair:			
Bellars	19- 8-5	3	3,460
Harjo	11- 8-5	1	1,248
Slick & White Eagle:			
Villines	20- 8-5	1	75
Sunray & Call-Cul:			
Davis	19- 8-5	1	251
Total		28	24,358

Bowlegs Pool

Amerada:			
Roscoe	15- 8-6	7	1,220
Atlantic:			
Baker	10- 8-6	4	360
Fleet	23- 8-6	3	220
Grayson	13- 8-6	4	660
Jones, A.	16- 8-6	2	40
Jones, C.	9- 8-6	1	140
Barnsdall:			
McNac	28- 8-6	1	21
Murrow	11- 8-6	4	395
Carter Oil:			
Bowlegs	15- 8-6	4	742
Burden	23- 8-6	2	220
Harjoche	14- 8-6	6	730
Hilly	23- 8-6	3	410
Jones	11- 8-6	4	570
Walker	15- 8-6	4	550
Wise	23- 8-6	11	1,590
Dixie:			
Culley	11- 8-6	1	90
Empire:			
Lacy	14- 8-6	6	465
Wise	23- 8-6	2	207
Gypsy:			
Bowlegs	22- 8-6	1	220
Bradley	9- 8-6	1	5
Cumsey	10- 8-6	4	757
Grayson	13- 8-6	4	535
Harjoche	10- 8-6	3	662
Jones	11- 8-6	1	40
Walker	15- 8-6	7	1,002
Wise	23- 8-6	2	192
I. T. I. O.:			
Barnett	24- 8-6	2	258
Barnett "B"	23- 8-6	1	....
Billington	22- 8-6	5	204
Bowlegs	22- 8-6	10	1,675
Davis	13- 8-6	4	506
Fay	13- 8-6	9	1,275
Goforth	15- 8-6	12	1,382
Livingstone	15- 8-6	10	1,829
Lizzie	13- 8-6	3	236
Walker	15- 8-6	8	791
Williams	12- 8-6	1	192
Wilmott	15- 8-6	4	344
Work	24- 8-6	1	....
Youngblood	24- 8-6	2	107
Magnolia:			
Davis	13- 8-6	3	324
Davis, M.	13- 8-6	1	158
Hammond	10- 8-6	8	692
Rhodos	12- 8-6	5	800
Van Buskirk	9- 8-6	3	548
McCulloch:			
Bowlegs	22- 8-6	2	230
Mid-Continent:			
Baker	10- 8-6	4	402
Bowlegs	22- 8-6	1	5
Smith	12- 8-6	6	530
Minnehoma:			
Bowlegs	15- 8-6	4	305
Prairie:			
Gahagan	23- 8-6	3	365
Harber	10- 8-6	8	2,175
Jones	11- 8-6	4	265
Templeton	12- 8-6	5	1,890
Whitney	23- 8-6	4	675
Pure Oil:			
Reed	14- 8-6	14	2,770
Strothers "D" 11 &	14- 8-6	4	490
Strothers "F"	10- 8-6	7	1,987
Roxana:			
Taylor	16- 8-6	5	50
Shaffer:			
Lacy	14- 8-6	3	360
Sinclair:			
Cumsey	10- 8-6	4	665
Ellen	11- 8-6	6	932
Harjo	14- 8-6	3	1,248
Jones	9- 8-6	7	530
Taylor	10- 8-6	4	698
Taylor, W.	10- 8-6	3	677
Walker	22- 8-6	4	862
Slick:			
Jones	3- 8-6	1	....
Texas:			
Reed	14- 8-6	11	975
Tidal:			
Grayson	13- 8-6	4	480
Harjoche	10- 8-6	6	1,141
Twin States:			
Jones	11- 8-6	1	....
Total		312	44,072

Earlsboro Pool

Amerada:			
Anderson	15- 9-5	2	410
Cowden	4- 9-5	7	1,020
Rogers	3- 9-5	2	88
Atlantic & Gypsy:			
Delaware	13- 9-4	1	80
Atlantic & Sinclair:			
Foreman	18- 9-5	1	130
Barnsdall:			
Brown	10- 9-5	4	1,273
Bruner, F.	2- 9-5	2	82
Bruner, N.	10- 9-5	3	1,167
Cudjo	14- 9-5	1	22
Davis, D.	11- 9-5	3	95
Davis, J.	11- 9-5	4	1,193
Davis, M.	11- 9-5	2	45
Gibson	9- 9-5	8	1,406
Hern	15- 9-5	1	1
Ingram	1- 9-5	8	666
Pack, S.	10- 9-5	4	142
Peter	10- 9-5	4	30
Sango	1- 9-5	4	1,624
Sebalka	15- 9-5	1	178
Sullivan, H.	11- 9-5	1	2
Sull-Harjo	11- 9-5	2	20
Wasutke	12- 9-5	3	862
Burke-Greis:			
Wisner	6- 9-6	2	490
Burke-Greis & Redbank:			
Mays	1- 9-5	1	485
Carter:			
Davis	13- 9-5	2	200
James	6- 9-6	4	2,920
Continental:			
Kays	2- 9-5	2	45
Spencer	12- 9-5	4	620
Empire:			
Barker	12- 9-5	1	62
Edmondson	3- 9-5	3	120
Empire & Amerada:			
Bullock	8- 9-5	1	450
Gypsy:			
Bruner	10- 9-5	4	2,402
Carter, B.	11- 9-5	8	2,895
Earl	16- 9-5	1	16
Hunick	5- 9-5	2	2,320
Noble	12- 9-5	4	1,212
Peter	10- 9-5	3	215
Sango	1- 9-5	13	3,842
State	16- 9-5	4	505
Independent:			
Bruner	10- 9-5	3	340
Sullivan	10- 9-5	1	18
Knapp	8- 9-5	3	1,135
Independent-Marnay:			
Gains	11- 9-5	3	400
Magnolia:			
Bryant	9- 9-5	6	135
Cowden	4- 9-5	2	28
Dixon	12- 9-5	1	20
Edmondson	3- 9-5	1	4
Gilliam	13- 9-5	1	3,823
Holmsley	11- 9-5	7	47
Hyde	13- 9-5	1	897
Ingram	10- 9-5	1	15
Lena	10- 9-5	3	49
Moore	24- 9-5	1	....
Seay	12- 9-5	9	1,774
Simpson	10- 9-5	4	346
Sparks	11- 9-5	6	563
Sullivan	12- 9-5	3	105
Mid-Continent:			
McCumber	9- 9-5	7	70
Rogers	5- 9-5	1	910
Mid-Kansas:			
Anderson	14- 9-5	1	35
Phillips:			
Dunaway	14- 9-5	1	25
Prairie:			
Baker	24- 9-5	1	60
Davis	13- 9-5	3	1,885
Graham, C.	3- 9-5	2	20
Graham, O.	10- 9-5	4	1,070
Stidham	11- 9-5	10	1,450
Roxana:			
Bayless	17- 9-5	1	....
Hearn	13- 9-5	1	109
Spencer	12- 9-5	2	1,359
Shaffer:			
Clark	1- 9-5	3	175
McCoy	36-10-5	1	280
Sinclair:			
Foreman	18- 9-5	1	15
Hollins	12- 9-5	1	10
Sango	2- 9-5	4	2,030
Skelly:			
Mays	1- 9-5	3	4,058
Shepard	6- 9-6	2	1,442
Spencer	12- 9-5	1	....
Skelly & Atlantic:			
Cherry	6- 9-6	2	1,411
Lottie	6- 9-6	1	1,346
Slick:			
Jones	6- 9-6	2	461
Slick et al:			
Campbell	6- 9-6	4	3,492
Superior:			
Ingram	1- 9-5	1	883
Walker	2- 9-5	3	2,083
Texas:			
Anderson	2- 9-5	8	138
Brown	10- 9-5	8	307
James	6- 9-6	2	360
Rogers	5- 9-5	5	1,895
Wilmott	10- 9-5	7	370
Tidal:			
Walker	35-10-5	3	1,952
Watkins	9- 9-5	7	1,990
Twin States:			
Barker	12- 9-5	3	49
Hern	2- 9-5	4	50
Total		293	70,827

Seminole Pool

Amerada:			
Fixico	23- 9-6	4	90
Killingsworth	23- 9-6	4	366
Rentie	23- 9-6	3	358
Atlantic:			
Cudjo, N.	35- 9-6	3	500
Barnsdall:			
Carter	24- 9-6	7	321
Henry	14- 9-6	2	504
Jones	34- 9-6	4	535
Carter Oil:			
B. Carter	24- 9-6	2	100
F. Carter	23- 9-6	3	85
Creamer	34- 9-6	2	7
Cudjo, R.	35- 9-6	4	110
Cudjo, W.	34- 9-6	1	35
Gilliland	27- 9-6	1	190
Grisso	23- 9-6	4	140
Grisso, M.	15- 9-6	1	140
Killings, G. F.	14- 9-6	4	45
Killings, M. E.	23- 9-6	12	4,650
Knapp	13- 9-6	1	35
Lukes	27- 9-6	5	1,025
Pounder	34- 9-6	2	182
Simpson	35- 9-6	2	210
Strothers	34- 9-6	4	435
Vierson	23- 9-6	2	35
Empire:			
Gross	25- 9-6	2	25
Wilson	34- 9-6	2	283
Gypsy:			
Buller	35- 9-6	4	505
Carter	24- 9-6	8	711
Cudjo	34- 9-6	4	482
Fixico	26- 9-6	7	185
Harjo	25- 9-6	3	562
Wolfe	26- 9-6	6	428
Independent:			
Fixico, P.	23- 9-6	3	245
Harjo	25- 9-6	2	80
Butler	35- 9-6	3	1,005
Fixico, T.	26- 9-6	6	380
Jones	26- 9-6	4	400
I. T. I. O.:			
Allen	25- 9-6	2	76
Bowlegs	26- 9-6	12	2,034
Goodin	23- 9-6	4	345
Harjo	23- 9-6	3	61
James	24- 9-6	2	137
Reed	24- 9-6	1	....
Kingwood:			
Johnson	22- 9-6	2	526
Magnolia:			
Boren	2- 8-6	1	4
Franks	25- 9-6	3	548
Mid-Continent:			
Rentie	14- 9-6	9	500
Tayeche	24- 9-6	7	200
Phillips:			
Strothers	27- 9-6	2	95
Prairie:			
Gross	25- 9-6	5	40
Mason	36- 9-6	1	50
Spencer	13- 9-6	1	7
Strothers	27- 9-6	8	1,730
Pure Oil:			
Strothers	26- 9-6	17	5,812
Strothers, B.	36- 9-6	4	790
Strothers, C.	34- 9-6	1	450
Roxana:			
Harber	22- 9-6	2	374
Lasley	22- 9-6	2	54
Sinclair:			
Carter	13- 9-6	2	27
Cudjo "A"	35- 9-6	6	687
Cudjo "B"	35- 9-6	4	760
Dicey	22- 9-6	2	550
Fixico	23- 9-6	4	720
Slick:			
Cudjo	35- 9-6	3	780
Franks	35- 9-6	6	1,181
Giblet	35- 9-6	3	1,820
Tiger	1- 8-6	1	45
Superior:			
Cudjo	35- 9-6	4	252
Texas:			
Mayhue	14- 9-6	1	260
Strothers	2- 9-6	1	....
Tidal:			
Carter	24- 9-6	4	497
Fixico	26- 9-6	6	1,320
Harjo	25- 9-6	1	120
Harjo, T.	23- 9-6	4	72
Turman:			
Cudjo	35- 9-6	4	592
Grisso	35- 9-6	1	85
Jones	34- 9-6	4	1,520
Total		282	40,176

Searight Pool

Amerada:			
Johnson	4- 9-6	1	38
Strothers	3- 9-6	2	760
Barnsdall:			
Jackson	5- 9-6	1	84
Carter:			
Davis	4- 9-6	6	336
Frazier	3- 9-6	6	1,680
Kiker	2- 9-6	1	20
Mandler	3- 9-6	2	10
Scott	26-10-6	1	12
Gypsy:			
Cudjo	4- 9-6	3	404
Magnolia:			
Varnum	32-10-6	1	32
Mid-Continent:			
Grayson	34-10-6	6	35
Saloche	33-10-6	5	785
Mid-Continent & Homaokla:			
Nevins	32-10-6	2	1,445
Pine:			
Lula	4- 9-6	1	26
Prairie:			
Cannon	33-10-6	1	5
J. Carter	10- 9-6	1	4
Hoach	33-10-6	1	4
Kincaid	33-10-6	2	10
Wimer	22-10-6	1	17
Pure:			
Aldridge	3- 9-6	4	1,182
Roxana:			
Strothers	3- 9-6	4	278
Sinclair:			
Polly	3- 9-6	4	1,315
Superior:			
Varnum	4- 9-6	1	....
Texas:			
Fleet	4- 9-6	1	35
Twin States:			
Varnum	4- 9-6	2	196
Wilcox:			
Chupco	4- 9-6	8	424
Total		68	9,166

Totals

Field—	Wells	Prod.
Little River	321	93,144
Maud	28	24,358
Mission	14	509
Bowlegs	312	44,072
Earlsboro	293	70,827
Seminole	282	40,176
Searight	68	9,166
Grand total	1,318	282,246

CONSERVATION ORDERS ON OPEN FLOW TESTS

OKLAHOMA CITY, Okla., Jan. 12.—Three orders looking to further conservation of gas in Oklahoma, particularly in the Chickasha Field, were handed down by the state corporation commission.

The three were recommended by W. J. Armstrong, the commission's chief conservation officer, and by a committee of operators in the Chickasha and other fields.

On petition of Wirt Franklin, representing other operators in the Chickasha Field, the commission ordered that the open flow test of gas wells be made 90 days instead of every 30 days. This order will be in effect all over the State.

The United States Bureau of Mines' experiment station at Bartlesville now is working on a plan which would eliminate all open flow tests. Gas operators over the State are watching the experiment with interest.

The second order applies only to the Chickasha Field. On petition of the Lone Star Gas Co. the commission ordered that the chart approved by the Bureau of Mines be used as the official one in correcting measurements of gas wells. This means that gauges may be made on any size pipe and the total flow can be reckoned from the chart, without opening the well.

The Magnolia Petroleum Co. was given permission to put into effect what is known as Parsons' plan to gauge gas wells in the Chickasha Field. This is a new experiment in measuring the volume of gas without opening the well, using pressure instead of the chart referred to in the second order. The order is in effect for six months only, as an experiment, and allows all other operators in the Chickasha Field also to use the Parsons test.

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GEOPHYSICAL SURVEYS made with Vertical Intensity Magnetometer. Also combined geological and geophysical reports, if desired. MID-CONTINENT EXPLORATION COMPANY, INC., 727 Giddens-Lane Bldg., Shreveport, La.

GEOPHYSICAL
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80 ACRES ROYALTY $5 to $20 in one to four interesting West Texas locations. Resale service, drilling bulletins, new locations reports. NATIONAL ROYALTIES, Box 1214-B, Wichita Falls, Texas.

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PRODUCING and CLOSE-IN royalties, some fine buys available, small and large, in older fields and West Texas. Write for list "P." National P. & R. Co., Wichita Falls, Tex.

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FOR SALE oil royalty in Logan County, Okla. Write, G. H. Reid, Lebo, Kansas.

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Winkler, Loving, Ward, Lea, Pecos Counties. J. R. Haynes, Grantville, Kans.

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WILL BUY small producing royalties or undeveloped royalties on good geology. Box 544, Dallas, Texas.

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LEASES—PRODUCTION

INVESTORS make money buying leases and royalties, Fisher County oil field. Several good buys. N. E. Porter, Royston, Texas.

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LEONARD CELESTE MONOCLINE RECOMMENDED BY DR. ROBT. T. HILL, GENE R. SMITH, LOYD WILLIAM STEPHENSON AND MANY OTHER NOTED GEOLOGISTS! WELL BEING STARTED IMMEDIATELY IN NEW HIGH GRAVITY OIL DISTRICT OF TEXAS.

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For leases around well at reasonable prices or interest in drilling block, write or wire the Imperator Oil Corporation, 3rd floor Petroleum Bldg., Fort Worth, Texas.

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46,000 ACRES 10 year paid up lease for $2.50 per acre. Star County, Texas. 819 Petroleum Bldg., Oklahoma City, Okla.

LIGHT AND HEAVY oil production for sale in Caddo, Louisiana District, also drilling block in new Zwolle Louisiana field. Address, G. Lucas, 712 Dalzell St., Shreveport, La.

LEASES—PRODUCTION

$3 to $5 per acre for West Texas land with Oil and Mineral right 40 acres up. New Mexico oil leases. Winter garden lots and truck farms on easy terms; agents wanted. A. Poe, 829 Wilson Bldg., Dallas, Texas.

WILL BUY New Mexico oil leases. Have for sale perpetual mineral deeds, under Major Oil Company leases, Lea County. Write MONARCH INVESTMENT COMPANY, Roswell, New Mexico.

MUSKEGON, MICHIGAN
OIL LEASES—31 acres also 12 acres near production, price reasonable; 4,000 Acres S. E. of field on structure, $1.00 per acre—6 months to drill. Full information gladly furnished and free about Michigan field. Wm. J. Wilson, 922 Majestic Bldg., Detroit, Mich.

FOR SALE—5 acres in Torrance Redondo Oil Field, $1,800.00 per A., Fred Hansen, 2063 Carson St., Torrance, Calif.

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6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
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Price Situation Unchanged at Chicago

Severe Cold Weather and Snow Over Week End. Furnace Oils Feature. Inquiries for Heavier Industrial Fuel Oil

By J. B. Waldo

CHICAGO, Jan. 14.—Severe cold prevailed over this territory on Sunday and was followed by snow on Monday. The gasoline business was light but featured the higher gravities. The price situation was unchanged, major refiners quoting 8 cents and the other sellers 7½ cents, at which price the bulk of the spot business was done. Kerosene was quiet and unchanged as to price. There was some demand for cars in transit in the furnace oil group and some regular orders, but the demand lacked the urgency that was expected after such a cold snap. The trade feels that it is only delayed, as consumption of all furnace oils is known to have been very heavy. Many, if not all, distributors ordered freely last week and they may be waiting for the cars already ordered to arrive before adding to their supplies in transit.

The market for distillates, zero gas oils and the lighter fuel oils used for domestic burners is very strong today with an upward tendency especially for the gas oils, which are being freely consumed this season as last and are not in large supply right now, refiners holding their stocks for full prices. Many dealers have supplies coming to them which were bought below the present refinery market, and while they are asking higher prices these lower cost materials have an influence in preventing still higher prices to the trade than are at present quoted. Straightrun gas oil is now fully a quarter of a cent higher to buy from refiners than it was a month ago and stocks are closely held.

Fuel Oils

There were a number of inquiries in the market for the heavier industrial fuel oils from buyers who supply their wants at about the middle of each month. There are evidences of the larger consumption which was to be expected at this season. Prices for industrial fuel oil were firmly held but not higher. Grade A natural gasoline was in some demand, and on this grade the price was firm. Bright stocks are very strong and prices of some of the compounded oils are advanced from 1 to 4 cents by refiners depending on the amount of bright stocks in the oil.

Activity in Burner Oils

Last week was very routine in every respect. There was a great deal of activity in the domestic burner oils with a severe cold spell over the territory. There was just the usual filling in demand for gasoline reduced to some extent by bad road conditions.

There are many jobbers today who are inquiring rather anxiously as to the desirability of signing the contracts which are generally offered. These contracts, with no exception so far as the major refiners in the Mid-Continent Field are concerned, are those with a spot market basis, a 3½-cent guarantee, less one-half the difference between the actual margin between the delivered price and the normal tank wagon price at the point of delivery and the guaranteed margin when the former is less than the guaranteed margin. These are not straight 3½-cent contracts. There are a few exceptions, two and possibly more sources of supply making contracts which provide for a guarantee of 4 cents with no split. Today the jobber can buy his gasoline at something less than 3½ cents below the guarantee in these contracts. But there is no one who can do more than hazzard a guess at what the price will be next July or August. The price movement on gasoline during the past eight or nine months has completely deceived some of the very best posted men. Those who have come nearest to the actual results have been those who simply guessed.

Quality as Factor

The oil jobber with a contract has an assured supply of material that should run uniform and there is much in this. One of the troubles with the oil industry is that it has chosen to build its business in the past, on price rather than quality, yet at present there are thousands of motorists in this territory who insist on having certain brands not because they are low in price but because they are of uniformly good quality. Some object to the refiner who has a station in their own town. This is more often a help than a hindrance. Such refiners are seldom price cutters, they know the value of quality as a sales argument, they advertise their gasoline and other products, their competition is fair and aboveboard. Very few good independent oil men complain of the Standard as a competitor. In fact, they usually state their worst competition comes from other independents. Then the average of margins over the season should be considered when thinking over the signing of a contract. It is not solely a matter of how cheaply gasoline can be purchased today for immediate or even for 30 days delivery but of how the contract will work out over the year. There are many jobbers who are very outspoken in their opposition to the present form of contract, but chiefly because of the smaller margins guaranteed and the method used to determine the spot market. Some say it is not possible to do business on so narrow a margin. If this is actually the case and the situation is general there will be a demand for a wider margin of sufficient insistence to insure some source of supply for that demand. There are enough refiners who depend on the business of the jobbers, who have no outlet of their own to insure a response to such a really wide demand.

Little Change in Gasoline

There was little change in the gasoline situation in this market last week. The major companies were holding for 8 cents for U. S. Motor gasoline. Their spot business was light and their contract business good; their customers were taking their quotas with little or no deviation from the quantities specified in their contracts. There was some complaint that some contract dealers were not buying any excess over the quota in their contracts from their contract refiner but ordering where they could secure a lower price. The prices named by other sources, some of them refiners and others resellers, ranged from 7¼ to 7¾ cents with a good share going at 7½ cents. Resellers could purchase for immediate delivery over the balance of the month quite readily at 7¼ cents from Oklahoma and North Texas refiners and as low as 6¾ cents from West Texas plants, the lowest price being for what is commonly termed "56 Navy." This gasoline is guaranteed to meet navy specifications, to pass doctor test but not corrosion tests in all cases and some of the gasoline has an objectionable odor due apparently to some lack on the part of the refiner as really sweet and high grade gasoline is being shipped regularly from the West Texas district. The volume of the gasoline movement from West Texas to this territory is growing steadily and should increase more rapidly as several new and modern plants begin operations. One jobber in commenting on the gasoline from this source stated he had no more trouble with odor than he had had with the gasoline from other fields.

Ohio and Eastern Points

There was no change in conditions in the eastern part of the Standard of Indiana territory or in Ohio where competition is still very keen between the local refiners and those from the surrounding states and even from more distant points such as the New Orleans and Group 3, although the parity of prices is so much against the refiners in the Group that their opportunity for business at a profit is small. There was some improvement in the demand for the higher tests, quite a few cars of the 68-70 gravity being ordered by dealers who prefer to use this in place of the antiknock gasolines. The 60-62 gravity with both a 437 and a 400 endpoint was also in more demand, some companies selling the 60-62 437 endpoint at their regular navy price. Natural gasoline was easy in this market and some buyers were waiting for still lower prices.

Kerosene Slow But Stronger

Kerosene continued to move in a slow fashion but was a little stronger on tone due to reports of export buying. Some sales were made at 5⅛ cents with 5½ cents held by several of the larger refiners. Aside from the export movement, the demand will not be materially changed until spring plowing approaches which may be in March in the southern part of this territory. This demand begins to make itself felt usually in the latter part of February. There has been a growing demand for tractor fuel for several seasons and important price advances were made both last spring and the spring of 1927.

Burner Oils

Last week we had a cold snap at the very beginning and again at the very close and the result was a greatly stimulated demand for all oils suitable for domestic oil burner use. In this branch of the industry, probably because the larger demand is rather recent, a real cold snap produces a condition described by those in the trade as a "mad house." The demand from consumers, particularly after a prolonged warm spell, comes with such a rush that the distributor cannot gauge his supplies. He may have what looks like an ample supply for 10 days and before he can really realize the change in his stock he is at the bottom of his tank. The rush and confusion seems worse than when there is a shortage of gasoline with some dealers. When the gasoline supply runs short, temporary relief can usually be had by resorting to some friendly neighbor dealer. But when the furnace oil supply is low with one all the others need every gallon they have and there is none to spare. So strong was the demand and so sudden that the Shell people have withdrawn temporarily from the market on all oils from 26-30 zero and up until, as one of the executives said, "They found out where they stood." Nearly every refiner was behind on deliveries. It is fortunate that the cold of the first of the week was followed so quickly by a second period of low temperature. Had the warm spell of the middle of the week continued, many dealers would have found they had overordered and would be offering cars on the track for sale at their contract costs or less. This has happened so frequently the trade are all afraid of such a condition until the present cold spell was reported on its way toward Chicago.

Higher Prices Named

As the result of this demand, the market for the distillates, zero gas oils and the lighter zero fuel oils is very strong and some higher prices have been named. The Shell refineries are an important source of supply for all these, as the management both distributes through its own stations and sells to other distributors. The statement that it would be out of the market for a while prevents it from receiving new business but it will fill as promptly as possible orders already booked. If it decides not to come back into the spot market for some time it will throw a large volume of business elsewhere and still further strengthen the local price situation. Several of the larger refiners also report they are sold up on all distillates and zero gas oils so that the quality products are temporarily rather hard to buy and any kind of a contract that insures delivery of suitable material is a valuable asset, no matter if the maximum price be quite high. Already some refiners state that their maximum price, the price named as the top in contracts providing for the sale and purchase of material at the spot market date of shipment, is below the actual price at which the material is selling to spot buyers.

Gas Oil Scarce

Straightrun gas oil which a month ago was so freely offered by several refiners that the buyers were not at all anxious to order has quite suddenly become scarce. At that time quantities could have been bought at 2⅜ cents and some at 2¼ cents. Today 2⅝ cents offers are being refused and some refiners are holding for 2¾ to 2⅞ cents. Some material is still available on previous contracts at former prices but with the demand quite active owners are asking better prices. There is considerable gas company buying but some of those regularly in the market with no contract are now drawing against stocks. This is the practice of some larger companies to fill their tanks at the low of the summer as nearly as they can hit it and then continue to purchase their monthly needs from month to month so long as the price is reasonable from their point of view. Usually at this season there is an advance and they begin to rely on their tanks. Some of the largest companies have contracts for delivery over the season on which they rely but there are others who did not contract even at the advantageous prices offered them. The companies who are really in a way out of luck are those who have made no provisions and have little storage but these are few and usually not large concerns. There is little industrial demand for either the zero or straightrun gas oils, the former being wanted chiefly for heating the latter by gas companies.

Fuel Oils

The heavy fuel oils have shown no changes in demand and while some refiners are asking a little higher price they can obtain it for only the higher gravities in the low sulphur, zero oils. Offerings are very free of the high sulphur oils with a low cold test, some well under zero. The low price at which these fuel oils are offered has caused many users to turn to high sulphur oils who had always previously been set against them. The changes that have taken place in the fuel oil business as regards the kinds of oil used have been very marked since the bringing in of the Smackover Field and later of other similar fields ending with the West Texas fuel oils. Formerly many large users bought a light fuel oil for summer and gas oil for cold weather. Now there is really very little demand from the industries except the gas companies for gas oil. Some gas oil is used by some plants for special purposes but not for the production of heat in volumes. One local railroad is experimenting with oil-electric engines which are being supplied with gas oil and another uses a special distillate for the same purpose. Aside from these special uses the trend has been wholly towards heavier and heavier fuels. This

(Continued on Page 134)

Trend in the East Toward Decline

No Actual Reduction Has Been Reported. Slight Improvement Noted in Inquiries for Export Gasoline

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Jan. 12.—The outstanding development in the local market during the past week was the inauguration of what was regarded as a price war between two of the leading independent distributors. Municipal Gas fired the first gun with a sharp reduction in both high test and " white" gasoline. Warner Quinlan responded immediately with a 7-cent drop in its premium grade and announced that hereafter the company will not handle "white" gasoline. The large distributors are watching this development with considerable interest, but, so far as can be learned, will not participate in the price cutting. Mild weather has encouraged gasoline sales and while the market is holding only steady, there has been no evidence of any shading of price levels.

The trend of refinery prices seems toward lower levels, although no actual reduction has been reported. Tank car deliveries to the near-by trade are made at 11½ cents. A slight improvement is noted in the export inquiry from the Continent for bulk gasoline.

To a large extent the gasoline market is governed by weather considerations. Ample stocks on the one hand serve as insurance against any stiffening of price. On the other hand the winter has been exceptionally open and mild with very few exceptions. Local distributors are apparently satisfied with current sales, considering the season. Export demand for both gasoline and naphtha is dull, and while prices are held around previously reported levels, the undertone is none too strong.

Tank Wagon Gasoline

There has been little change in this market during the past winter. Tank car gasoline and kerosene prices are holding unchanged so far but leading interests report a weak undertone which may be possibly reflected in lower prices if the present demand should ease much further. Mild weather conditions prevailing over the eastern territory have tended to curtail the demand upon kerosene. Per contra this situation should react favorably in the gasoline market, but conditions in this line are somewhat unsettled by the price war between Warner Quinlan and the Municipal. It is not likely the trend toward lower price levels will be influenced by this development among the independents.

Naturally the larger distributors are concentrating their activities in promotional work on their special grades, especially high compression gases. The great increase in new car sales in this district has shown a satisfactory reaction in sales of special gasoline.

Fuel Oil

A good demand is evident in fuel oil this week, but leading refiners have little spot business in sight. Virtually all of the demand is for domestic consumption. Demand for bunker "C" holds up very well while bunker oil volume is fair. Mild weather conditions are limiting the demand for fuel oil for industrial and domestic heating companies. Virtually all of the bunker oil business is being done at $1.05 per barrel for Grade "C" at refineries and $1.10 a barrel f.a.s. New York harbor.

Considerable Diesel oil is moving here, mainly against contracts previously placed at $2 per barrel.

Paraffin Wax

While business has continued generally quiet in the wax market an undercurrent of stability was evident with prices very firmly maintained. Due probably to the general practice of taking inventory at this season, demand for wax has been limited in most cases to quantities sufficient to fill immediate requirements, but few buyers have shown any inclination to stock up against future wants, even for the very immediate future.

Technically, the market continues fairly strong as stocks in refiners hands are unusually small for this period leaving producers in a position to hold present production schedules or increase them if desired without risking an unduly heavy accumulation of finished material.

Toward the end of the week call for white crude scale 122-124 a.m.p. and 122-126 a.m.p. has shown signs of increasing activity with sales holding close to 5⅛ cents per pound for both descriptions. There was also a growing interest manifested by buyers of fully refined with current prices well maintained. While the forward movement has slowed down somewhat reports in the trade indicate that export demand is becoming more active and an improvement in this quarter would not be surprising.

Export Prices Steady

Export prices have steadied considerably here and there is a growing impression the market has about touched bottom. Even the more bullishly inclined are not disposed to talk of any possible uptrend in the immediate future. Sentiment is best expressed by the plain statement that prices are expected to hold at present levels with only minor fluctuations one way or another. Gulf export quotation on navy gas held at 8 cents with 60-62 degrees at 9½ cents, and 64-66 at 9¾ cents; 41-43 prime white was at 6⅝ cents to 6¾ cents, with 42-44 water white at 7⅝ cents to 7¾ cents. In North Atlantic ports, Navy is charged at 10¼ cents, 64-66 at 11¾ cents and 66-68 (aviation gas) demands 14¾ cents. Prime white gas charges at 7¾ cents, with water white at 8¾ cents.

There has been a distinct improvement in the demand for bottoms. Although no actual closings have been reported. Cargo inquiries include 5,000 tons of 64 degrees and 1,000 tons of prime white out of the Gulf for France, and 6,000 tons of 64-66 degrees for March shipment from the Gulf ports for France, 6,500 tons California, March shipment, also for France, with one or two less well defined reports of definite inquiries on California, with preference going for March shipment.

Petroleum Exports

The following table shows principal exports of petroleum and refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted).

	Week Ended—		
	Jan. 5	Dec. 29	Dec. 22
Gasoline	410,000	179,300	197,500
Naphtha	.....	440,800	1,600,000
Kerosene	50,100	498,600	364,700
Fuel oil	36,000	94,700	260,700
Lubricating oil	353,000	2,710,200	2,429,600
Petroleum, refd	2,514	595,800	554,000
	Pounds—		
Petrolatum	.....	19,600	.....
Paraffin wax	542,000	1,039,500	1,434,800
Refined	.....	.....	32,500
Scale	43,000	244,300	543,100
Lub. grease	459,000	1,193,700	933,300

Imports

Imports of crude and refined oils at principal United States ports for the week ended January 5, according to figures collected by the American Petroleum Institute, were 2,482,000 bbls, a daily average of 354,571 bbls., compared with 1,473,000 bbls., a daily average of 210,429 bbls. for the week ended December 29, 1928 Total exports for December were 8,174,000, a daily average of 263,677 bbls., against 7,499,000 bbls., a daily average of 249,966 bbls. for the month of November.

Total for Month of December, 1928
(Barrels of 42 gallons)

At Atlantic Coast Ports—	
Baltimore	478,000
Boston	495,000
New York	4,367,000
Philadelphia	1,312,000
Others	270,000
Total	6,922,000
Daily average	223,290
At Gulf Coast Ports—	
Galveston district	90,000
Port Arthur and Sabine	79,000
New Orleans and Baton Rouge	1,089,000
Total	1,252,000
Daily Average	40,387
At All United States Ports—	
Total	8,174,000
Daily average	263,677

California Oil Receipts

Receipts of California oil, crude and refined, at Atlantic and Gulf Coast ports for the month of December totaled 1,764,000, a daily average of 56,903 bbls., compared with 2,347,000 bbls., a daily average of 78,233 bbls. for the month of November.

Total for Month of December

	(Bbls of 42 gals.)
At Atlantic Coast Ports—	
Baltimore	154,000
Boston	92,000
New York	765,000
Philadelphia	583,000
Others	95,000
Total	1,689,000
Daily average	54,484

Distribution of total California oil receipts is as follows:

Crude	74,000
Gasoline	1,396,000
Kerosene distillate	95,000

AGREE ON STANDARD GRADES OF FUEL OILS AND FURNACE OILS

By A. E. Mockler

NEW YORK, Jan. 11.—Commercial standard grades of fuel oil were definitely established at an all-day conference of representatives of leading refineries, distributors and equipment manufacturers, which was held in the Hotel Pennsylvania here on January 9. The meeting was called under the auspices of the commercial standards unit of the United States Bureau of Standards. This meeting marked the first official move toward universal recognition of the new classifications of fuel oils and paves the way for absolute assurance of uniform quality of oil to the user of oil-heating equipment.

Harry F. Tapp, on behalf of a committee representing the American Petroleum Institute, the American Oil Burner Association and other industrial bodies, presented schedules of standards. With few minor changes, these schedules were approved and are now to be submitted to the entire oil refining industry.

The recommended standards, which are now to be submitted to the industry, provide for three grades of oil suitable for use in domestic burners and for three grades adapted to industrial use. The former are to be known as "light," "medium" and "heavy" domestic fuel oil, and the latter as "light," "medium" and "heavy" industrial fuel oil. Flash point, allowance of water and sediment, maximum pouring temperature, distillation temperature and viscosity were the determining factors in making the classification.

If the standards are accepted by 65 per cent of the refining companies, they will become the official Department of Commerce standards for domestic and industrial fuel oils.

Appoint Committee

A standing committee, of which Harold Farmer, of the Philadelphia Electric Co., is chairman, will consider the various problems incidental to the adoption of the new standards. Mr. Farmer is also chairman of Subcommittee 30 on Fuel Oil, Committee D-2 of the American Society for Testing Materials. Additional members were appointed to the standing committee to make it representative of all the interested groups and thus avoid duplication of effort by two separate committees. It was agreed that revisions should be made annually, the definite time of year to be set later.

Harry H. Steidle of the commercial standards unit of the United States Bureau of Standards was chairman of the meeting. Harry F. Tapp, technologist of the American Oil Burner Association, led the discussion. Among the organizations represented were Standard Oil Co. of New York, Standard Oil Co. of New Jersey, United States Shipping Board Fuel Conservation Section, International Burner Corp., National Board of Underwriters, Underwriters Laboratories, National Fire Protective Association, Standard Oil Co. of California, Petroleum Heat & Power Co., New York Central Lines, General Electric Co., American Society for Testing Materials, New York Edison Co., Sun Oil Co., Tide Water Oil Co., Swan Finch Oil Corp., American Petroleum Institute, Domestic Engineering Co., National Association of Purchasing Agents, Shell Petroleum Corp., Sylvestre Oil Co., Inc., Shaffer Oil & Refining Co., Argo Oil Corp., Columbia Gas & Electric Co., The Carborundum Co., Atlantic Refining Co., Beacon Oil Co., Winslow Boiler Engineering Co., Oil Heating Institute, National Electric Light Association, Crew Levick Co., Vacuum Oil Co., Silent Automatic Corp., National Airoil Burner Co., Super Oil Heater Co. and Asiatic Petroleum Corp.

NEWEST REGULATIONS BY MEXICO ON OIL

WASHINGTON, D. C., Jan. 12.—The regulations issued by the government of Mexico, signed by President Plutarco Elias Calles and governing the Mexican petroleum industry have been made public by our State Department.

Concessions in the Federal zones require owners of petroleum leases to drill two wells at least in the first two years. The exploitation period is limited to 30 years with the privilege of renewal for 20 years more.

If these regulations are not complied with the exclusive right to drill additional wells will be lost with the exception of wells included within the 6 square kilometers described in Section 5 over which the contractor or concessionaire shall have the right to continue his explorations and exploitation. Section 5 provides that as soon as the permit to drill the first well is granted the land comprised within 6 square kilometers surrounding the well shall be reserved so that the concessionaire may explore and exploit two-thirds of that area, the other third to remain at the disposition of the government which shall exploit of its own account or grant a new concession or accept a new contract, preference being given in each case and under equal conditions to the original concessionaire.

Frequent reports of operations are required and in the case of geological reports it is stipulated these shall be held as confidential for at least two years. Failure to comply with these regulations shall be penalized with a fine of not less than 100 pesos or more than 5,000.

Practical Suggestions in Refining

By W. T. Ziegenhain

Recent Patents

CHARGE THROUGH REFLUX TOWER

1,693,946. Operation of Pressure Stills. John E. Bell, Brooklyn, N. Y., assignor to Sinclair Refining Co., Chicago, Ill., a corporation of Maine. Filed July 26, 1924. Serial No. 728,307. 13 Claims. (Cl. 196-48.)

The improvement in the operation of pressure stills for cracking hydrocarbon oils and distillates, which comprises subjecting the vapors from the still to a refluxing operation in a zone separate from the vaporizing zone in direct contact with fresh charging stock to the still, returning the reflux and unvaporized charging stock introduced into the refluxing operation to that portion of the still stock which is to be immediately subjected to high temperature, passing the vapors from the refluxing operation successively through a series of separate vapor condensing chambers maintained at progressively lower temperature, passing fresh charging stock to the still in indirect heat interchanging relation with the vapors in the condensing chambers, refluxing a part of the condensate from chambers of lower temperature to chambers of higher temperature, and introducing preheated charging stock from the condensing chambers directly to the pressure still.

OIL TREATED WITH FUMING SULPHURIC AND ALCOHOL

1,681,895. Refining Oils. Lous Burgess, Bayonne, N. J., assignor to Standard Oil Development Co., a corporation of Delaware. Filed July 13, 1923. Serial No. 651,435. 3 claims. (Cl. 196—38.)

1. The improvement in the art of refining hydrocarbon oils, which comprises repeatedly treating the oil with fuming sulfuric acid in the proportion of 5-10%, whereby sludge and oil-soluble sulfur containing compounds are formed, and after each treatment with 5 to 10% of fuming sulfuric acid separating the sludge and after each sludge separation subjecting the oil to the action of caustic soda and an aliphatic monohydric alcohol, and removing from the oil the alcohol solution containing dissolved oil-soluble sulfur compounds.

TIN-ANTIMONY CATALYST

1,696,913. Continuous Process for the Refining of Oils. Eric Th. Hessle, Lemont, Ill. Filed March 31, 1926. Serial No. 98,707. 9 Claims. (Cl. 196—52.)

5. The process of refining oils, which includes subjecting the oil in the form of a true fog at a temperature above atmospheric to the action of a decomposition catalyst comprised of tin and antimony, the latter being present in an amount equal to less than 10 per cent of the tin.

CHLORINATION OF TREATING MEDIUM

1,691,266. Process of Treating Liquids. Lyle Caldwell, Los Angeles, Calif., assignor to the Celite Co., Los Angeles, Calif., a corporation of Delaware. Filed January 27, 1926. Serial No. 84,247. 9 Claims. (Cl. 196—147.)

1. The process of treating oleaginous liquids comprising bringing the liquid to be treated into contact with a pulverulent treating agent obtained by chlorinating the product of reaction between diatomaceous silica and an hydroxide of an alkaline earth, such reaction product containing free alkaline hydroxide, and removing the treating agent from the liquid.

TWO SMALL SHELL STILLS REDUCE 1,500 BBLS. PRESSED DISTILLATE

By hooking up two 600-bbl. shell stills in series, each equipped with a 30 by 6 bubble cap tower, E. J. Slater, superintendent of the Champlin Refining Co.'s plant at Enid, Okla., has been able to reduce 1,200 bbls. of pressed distillate daily with a fuel savings of nearly 40 per cent and with an increase in the yield of viscous lubs compared to the previous batch operation without tower.

The control is flexible enough to permit an oil of any commercial viscosity to be made but at the Champlin plant the production is being limited at present to the 200 viscosity grade and the 240 viscosity grade, these being alternately produced as residual products. Overhead cuts of light neutrals could be taken off at different places in the towers. The rather limited market for these products does not allow a maximum quantity to be produced and much of the light lub distillate made is recycled in the system. This distillate serves as a pump-in over the towers for control and when the stocks build up in excess of the margin needed for this work it is run to gas oil as a charging stock for the pressure units.

When making the 240 viscosity lub the yield from the pressed distillate is increased from 5½ to 6 per cent and when the 200 viscosity oil is made it is slightly more. Enough steam is introduced into the system at opportune points to minimize cracking and the flashpoint of the finished product in each case is well above the general commercial minimum specified.

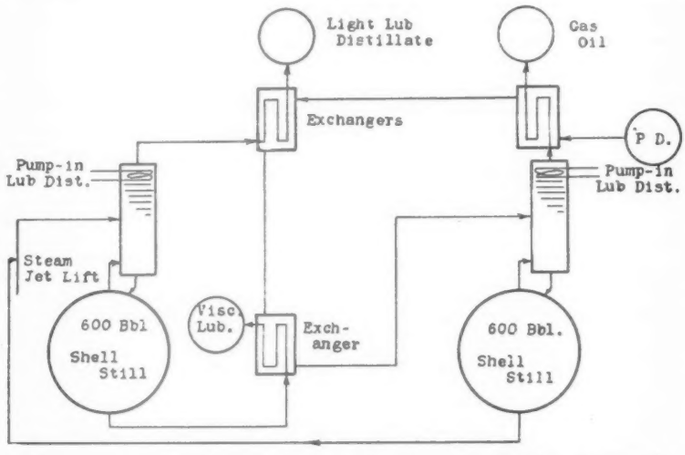
The equipment consists of two 600-bbl. shell stills, equipped with bubble cap towers 30 feet high and 6 feet in diameter. Each of these is insulated and contains 13 trays of bubble caps spaced 2 feet apart. Each tower is also equipped with an open coil at the top for control, the light lub distillate being pumped in continuously through these coils. Tracing the flow of the pressed distillate as it leaves the storage tank, it first passes through a heat exchanger where it takes up a part of the heat of the overhead stream from the first tower. Then it passes through a second exchanger being heated further by the overhead stream from the second tower. The preheating is completed in a third exchanger through which the bottoms from the second still are pumped and this not only helps to heat the incoming pressed distillate but also cools the 240 or 200 viscosity oil cutting down the need of further cooling to eliminate oxidation. After passing through these preheaters it is pumped over the middle tray in the first tower and the light fractions or gas oil distill off. The heavier fractions which do not vaporize work their way to the bottom of the tower and finally fall through the knock-back line into the first still.

Because of the relatively large body of oil contained in the first still, a point of equilibrium is set up whereby the composition or boiling range of the residue remains fairly constant. This permits a closer separation in the second tower since the second tower thus receives a constant supply at an almost constant temperature and the oil is nearly constant in its composition. A steam jet lifts the residue oil from the first still up to the middle tray on the second tower and in similar manner, the lighter fractions distill off to make the light lub cut and the unvaporized fractions fall to the bottom and finally pass into the second still. Stream samples of the pump-out from the last still tell if the bottoms are being sufficiently concentrated and the control is even simpler than in a batch operation.

Mr. Slater has taken particular care to eliminate any restriction in the vapor flow in all points in the system, finding this a great help in holding down cracking. Two 12-inch vapor lines lead from the still to opposite side at the base of the towers. This guarantees adequate capacity at all times and gives a better distribution of the vapors.

Steam is introduced into the system as bottom steam in the stills and because of the open flow of steam through the steam lift pump an additional quantity is supplied the second tower. Thus, the important steps in the distillation of the pressed distillate are all carried on in a reducing atmosphere. At the same time, the quantity of steam does not exceed that used in a batch operation.

Below is a diagram of the general hook-up of the equipment at the Champlin plant and shows how simple and effective the operation is. This principle might be extended further if needed and the manufacture of special oils could be easily accomplished. A third or even a greater number of stills could be added to the system to make many kinds of special oils. A stream of closely fractionated gas oil suitable for use as an absorption oil in coal gas plants in the manufacture of benzol could be made. A similar product for use as absorption oil in direct fired natural gasoline plants could be conveniently made. Where the market demands permit a light lub cut suitable as twine oil might be taken from one of the upper trays. Many grades of light spindle and machine oils may also be taken as cuts from other trays in the several towers and there is practically no limit how far this idea might be carried out but rather depends upon the individual plant needs and policies.



Arrangement of equipment used at the Champlin Refining Company's plant at Enid, Okla., to reduce pressed distillate to finished lubs continuously.

Study of Operation Of Fractionating Tower Is Completed

In a technical paper just issued by the Bureau of Mines on the fractional distillation of crude petroleum by M. B. Cooke and H. P. Rue some interesting conclusions have been drawn. The work was carried out in a small bubble cap tower each tray of which could be watched through a glass section in the periphery of the tower. In the conclusions the paper points out that in general fractionation and tower operation the best separations are obtained at the top of the tower, where the mixtures to be separated are the simplest. It is also necessary to remove all residuum before attempting to fractionate the desired light products. This is accomplished in the bottom section of the tower and in the evaporator when the still is so equipped. If the residuum is to be entirely stripped of the desired light products it must be heated enough to vaporize some of the residuum itself. This fraction is knocked back in the bottom sections of the tower or if desired can be removed by a separate dephlegmator on the evaporator. The other preliminary separation is necessary only when a crude, high in light gasoline is to be distilled. If such a crude enters the system through a heat exchanger, a considerable portion of its gasoline content will be vaporized and can be separated, condensed and run direct to storage if the heated crude is passed through a flash drum or evaporator. If precautions are taken to prevent evaporation and any condensed vapors are run to a gasoline recovery plant, all of the light gasoline fraction will be obtained in this fraction in a condition suitable for blending with the heavier fractions recovered later from the top of the combination tower. Separating the light gasoline in this way prevents the formation of excessive amounts of vapor when the crude is passed through the pipe still and improves the effectiveness of the combination tower by simplifying the composition of the mixed vapor that enters it. The report further showed that within reasonable limits, increasing the temperature drop by controlling the reflux and still temperature has the same effect on the effectiveness of the tower as increasing the number of plates. A 20-plate tower carefully controlled may be made just as effective as a 30-plate tower inefficiently handled. A description of the apparatus used and a discussion of the general problem was contained in The Oil and Gas Journal on page 120, November 1, 1928, written by Ralph H. Espach, of the Bureau of Mines. The complete discussion of the apparatus and procedure used in arriving at these conclusions may now be obtained from the Bureau of Mines under the name of Technical Paper 431, on the subject of "Studies in the Fractional Distillation of Crude Petroleum." To secure a copy the superintendent of documents at the government printing office in Washington should be addressed and 15 cents enclosed.

Brief Items for Petroleum Refiners

Purchase of Beacon Widens New Jersey Standard's Market

The Standard Oil Co. of New Jersey became a direct factor in New England marketing last week when the company acquired a controlling stock interest in the Beacon Oil Co. of Massachusetts. The latter company operates a refinery with 18,000 bbls. crude oil capacity at Everett, Mass. (near Boston), and through subsidiary marketing organizations has a wide distribution in the New England states which in the past has been considered the marketing territory of the Standard Oil Co. of New York. The Atlantic Refining Co. also has had distribution in some of the New England states for several years.

Included in the subsidiary marketing companies of the Beacon company are the Colonial Filling Stations, Inc., Dixie Filling Stations, Inc., Merrimack Filling Stations, Inc., and W. S. Farrar & Sons, Inc. The Colonial stations are among the most attractive of the eastern states.

The refinery manufactures all the light end products and asphalt. The plant has large cracking facilities of the Tube and Tank type under license from the Standard Oil Co. of New Jersey. The cracking capacity is rated at 17,000 bbls. daily.

The acquisition of the Beacon company is another move on the part of the New Jersey Standard to extend its domestic marketing outlets. Last year the company organized the Standard Oil Co. of Pennsylvania and during the past year has established retail marketing facilities in that State. It is understood that the company expects to continue this expansion program during the coming year in other states.

The Standard of New Jersey purchase of the Beacon company was the second important transaction of the past month involving independent refining organizations operating in Massachusetts with extensive marketing facilities in the New England states. The other purchase was that of the New England Refining Co. operating a 35,000-bbl. refinery at Fall River, Mass. This company was acquired by the Shell Oil Corp. (Dutch-Shell). The only other refinery operating in Massachusetts is that of the City Service Refining Co. with a plant at East Braintree. This company is one of several oil organizations which are controlled by Cities Service Co. (Henry L. Doherty & Co.).

TO BUILD REFINERY

The Big Chief Oil Co. has announced plans for the construction of a refinery near New Orleans. The plant will have a capacity of 5,000 bbls. daily and will operate with crude oil obtained from the Winkler County Field of Texas.

The company expects to market its output in the South and Southeast. An allied export company will operate a barge line on the Mississippi River and intercoastal canal.

IN CHARGE OF CHICAGO SALES

CHICAGO, Jan. 15.—Effective today L. E. Thorp was placed in charge of the local sales office of the Transcontinental Oil Co. Mr. Thorp was formerly with The Texas Company and later operated the Thorp Specialty Co. He succeeds E. J. Dwyer.

PLANT SHUT DOWN

The Diamond Oil Co. has shut down its 250-bbl. refinery at Virgin, Utah. The plant is being repaired and will resume operations in the early spring.

MANY CHANGES AT REFINERIES IN NORTH LOUISIANA AND ARKANSAS

SHREVEPORT, La., Jan. 12.—Close to $3,000,000 or $4,000,000 in new construction, rehabilitation and enlargements to existing equipment have been spent by refiners in the North Louisiana and Arkansas refining area during the past year. Bayou State's 600-bbl. crude capacity lub plant at Hosston, Ark., was built from the ground up and three others were salvaged, modernized and placed in operation. These were Dixie Oil Co.'s plant at Superior, near Vivian, La., Houston Oil Co.'s old plant, just outside of Camden, Ark., and the plant at Hollywood, a suburb of Memphis, Tenn., acquired and put into operation by Urania Petroleum Co. during the latter part of the year.

Bayou State got one of two shell still units in operation on its 600-bbl. plant at Hosston, essentially a Schultz process lub plant with gasoline as a by-product, and is now making final tests on a tube still unit, expecting to be operating at capacity soon producing a low cold test lub. It is an electrically operated plant throughout, power being furnished by the same equipment that operates its producing leases.

During the early part of last year the manufacturing division of the Standard Oil Co. of Indiana decided to rehabilitate and place in operation the old Paramount plant at Superior, a short distance south of Vivian, La. This was done and operations began in the latter part of April with Dixie Oil Co. as the operating agency. It was put in operation as a topping plant of 5,000 bbls. daily capacity but has been operating on a 2,500-bbl. basis since using for the most part Dixie's Pine Island production delivered by a 4-inch line. With the completion of a pipe still unit now under construction it will be in the market for outside crude and may operate at capacity, running gasoline, kerosene and gas and fuel oils.

Houston Plant

The Houston Oil Co. built a plant just south of Camden in 1925 to run Smackover heavy oil and supply Cotton Belt Railroad with fuel oil. When the fuel contract requirements were met it shut down and remained so until the middle of last summer when it inaugurated plans for resumption of activities on a larger scale, these entailing the addition of 3,500-bbl. pipe still doubling its capacity and a line to the Champagnolle Field to bolster its crude supply.

The Urania Petroleum Co., successful in opening the Urania Pool in LaSalle Parish where it sold out its interest rather than develop them itself, entered the refining phase of the industry in November when it placed in operation a 1,000-bbl. daily crude capacity plant near Memphis. It is a plant of one pipe still and four shell stills, new towers, storage, etc., equipped to turn out gasoline, kerosene, gas oils distillates and lubs but is operating chiefly for gasoline and fuel oil production running Seminole, Okla., crude.

When Shreveport-El Dorado Pipe Line Co. early in the year acquired a majority of the stock of the Shreveport Producing & Refining Co., of which it was already a principal owner, a program of improvement and enlargement was announced which has since been completed. The first item of this program was a 3,000-bbl. daily crude capacity pipe still added to by other alterations and improvements increasing its plant capacity to 10,000 to 12,000 bbls., an increase of approximately 50 per cent. In addition to the still, eight 1,500-bbl. run-down tanks and two 80,000-bbl. crude storage tanks were built, the boiler house enlarged to accommodate an additional 244 horsepower boiler, loading rack capacity enlarged to 70 cars and new compressor units, pumps and heat exchangers added. There also was installed a new flash drum serving the Dubbs cracking units.

Purchase of the remainder of the

(Continued on Page 140)

TO INCREASE CAPACITY OF KENDALL REFINERY

The Kendall Refining Co. is increasing the capacity of its refinery at Bradford, Pa., from 1,500 to 3,500 bbls. daily. A large tube still is being installed with modern fractionating equipment. The company's lubricating oil plant also is being enlarged so that it will be possible to completely refine the 3,500 bbls. daily.

The Kendall company, which is one of the oldest Pennsylvania refinery organizations, recently started an intensive sales campaign on a national scale. Advertisements have appeared in publications with a national circulation and the company during 1929 expects to have its lubricating oils available to consumers throughout the United States. This enlarged demand necessitated the enlargement of the company's refinery. The refinery operates with Pennsylvania grade crude oil exclusively.

DOUBLE REFINERY CAPACITY

The Anderson Prichard Oil Corp., Oklahoma, is increasing the capacity of its Cyril, Okla., refinery from 2,500 to 5,000 bbls. daily. To provide an additional crude oil supply the company is laying a 4-inch line connecting the refinery to the Duncan, Okla., field.

The Col-Tex Refining Co., an affiliated company with headquarters in Oklahoma City, also has enlarged its pipe line facilities for crude oil. The company has completed a 4-inch line connecting its 10,000-bbl. refinery at Colorado, Tex., to the Chalk Pool in Howard County. This line is now in operation.

CHANGE CRACKING UNIT

The Ouachita Valley Refining Co. has changed its cracking still at its El Dorado, Ark., refinery so that it is now operating as a complete skimming unit. The cracking unit which was of the tube and tank type had been in operation for several years.

By making minor changes in the design of the tube still and adding towers for fractionating equipment it was possible to secure an efficiency skimming unit. The plant previously had shell stills for the skimming operation. These have now been shut down and the converted cracking unit is refining 1,000 bbls. of crude oil daily.

GEORGE CORYELL DIES

Funeral services for George Coryell, prominent independent jobber of Nebraska and former president of the Nebraska Independent Oil Men's Association, were held January 3 at Lincoln. Mr. Coryell was actively engaged in the jobbing business in Nebraska for several years.

IMPROVE REFINERY

The Texas Pacific Coal & Oil Co. is enlarging and making improvements at its Fort Worth, Tex., refinery. The plant is being enlarged and a pipe still is being installed for rerun operations.

NEW COMPANY TO ERECT REFINERY AT WELLSVILLE

BRADFORD, Pa., Jan. 12.—One of the largest mergers in the history of the local oil fields, which will result in the organization of one of the largest and most powerful oil companies in the entire Pennsylvania-New York Field, is being formed.

The merger is being directed by W. E. Dusenberry, president of the First National Bank of Olean and capitalist of that city, and involves a number of private companies in all of which he is largely interested.

The merger will include some of the most productive leases at Duke Center, Kings Run and Mix Creek near Eldred, Bolivar and Rock City.

Among the private companies mentioned in the combine are the Shaner Oil Co., the Messerly Oil Co., the Davis Oil Co., the Kings Run Oil Co. and the Mix Creek Oil Co.

The new organization resulting from the combination of these companies will have a daily production of 2,100 bbls. of Pennsylvania grade crude oil.

Plans call for the erection of an oil refinery at Wellsville, N. Y., and oil from the company's leases in the nearby fields will be piped to that town.

In commenting upon the merger, Dusenberry said that no money would be involved in the transaction. Stock will be absorbed by the present holders and will have no-par value.

STANDARD OIL OF OHIO PERSONNEL CHANGES

A. J. Millns, vice president in charge of sales for the Standard Oil Co. of Ohio, last week announced his resignation after 45 years of continuous service with the Ohio company. He will be retired on the company's pension plan.

Mr. Millns has been in charge of the Ohio Standard's marketing department for many years after several years of service with the company in subordinate positions. His retirement from active service with the company follows that of A. P. Coombe who last summer resigned as president of the Ohio Standard after more than 40 years' service with Standard companies.

Mr. Millns is succeeded by A. A. Stambaugh as general sales manager. Mr. Stambaugh was formerly in charge of the industrial relations department.

J. S. Harrison, who has been in charge of the improvement program at the company's two refineries during the past two years, was elected vice president in charge of manufacturing. Howard G. Jones was elected vice president in charge of accounting and finance. George A. Burke was elected vice president in charge of manufacturing.

ENLARGE LUB PLANT

The lub oil plant of the Texas Mexican Oil & Refining Co., located at Laredo, Tex., is being enlarged so that it will have a capacity of approximately 500 bbls. daily. At present the company is refining 8,000 bbls. of crude oil monthly.

The plant is operated exclusively on Mirando, Tex., crude oil specializing in zero cold test lubricants. The light end products are marketed both in Texas and old Mexico.

TO ADD PIPE STILL

The Big Spring Refining Co., which recently completed a skimming plant at Big Spring, Tex., is planning on enlarging the present capacity of 2,500 bbls. daily. The company expects to install a second pipe still which will increase the capacity of the plant to 5,000 bbls. daily.

Natural Gasoline Manufacture

Annual Meeting of Association to Be Held May 21 and 22

The annual meeting of the Natural Gasoline Association of America will be held at the Mayo Hotel, Tulsa, May 21 and 22. The dates were selected at a meeting of the board of directors held at the Tulsa headquarters last week.

The board appointed the following program committee: E. L. Peck, Empire Oil & Refining Co., Emby Kaye, Skelly Oil Co. and F. E. Rice, Phillips Petroleum Co. The committee expects to prepare a program which will be of special interest to plant operators. A report by Dr. G. G. Brown of the University of Michigan will explain the progress of the association's research work over the past year.

The reports of Doctor Brown, who has been in charge of the association's research work for the past three years, have been one of the features of the annual meetings in the past. On May 20 there will be a dinner for executives of the natural gasoline companies at the Mayo Hotel.

The board of directors also announced that a plant operators' meeting will be held at Ranger, Tex., on February 26. Dr. E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co., Fort Worth, will have charge of the program. A large attendance of plant operators in the Ranger and Eastland districts is expected at the meeting. Several prepared papers will be presented and opportunity given for general discussion of practical operating problems.

LONE STAR GAS COMPANY ENLARGES PLANT OUTPUT

The Lone Star Gas Co. of Dallas, which is one of the largest natural gasoline plant operators in Texas has enlarged the capacity of its Gordon plant in Palo Pinto County to 25,000 gallons daily. This is double the former capacity of the plant. The company also has doubled its capacity of its Hollis, Okla., plant. This plant, known as the Harmon plant, now has a capacity of 8,000 gallons daily.

The Lone Star company is a large owner of gas properties in Texas and has wide distribution for natural gas including the cities of Dallas and Fort Worth. Its natural gasoline plant operations are operated in connection with this gas distribution system. Where the gas has a small percentage of gasoline the plants are installed. The plants now have a total capacity of 69,500 gallons daily.

In addition to the two plants mentioned which have been enlarged the company operates the following plants:

Texas Location—	Daily Capacity Gallons
Petrolia (Clay County)	15,000
Gainesville (Cooke County)	10,000
Tiffin (Eastland County)	5,000
Brazos (Palo Pinto County)	7,500
Deadmona (Eastland County)	3,000
Cheany (Eastland County)	5,000

VAPOR PRESSURE IN GASOLINE

The Department of Engineering Research, University of Michigan, Ann Arbor, announces the publication of a 130-page circular, with chart, on the vapor pressure of hydrocarbons. A new form of vapor pressure chart is given with an account of its development. The chart includes the group of hydrocarbons from propane through heptane.

The information is especially useful in connection with calculations for high pressure stills, as well as the low pressure analytical stills used in hydrocarbon investigations. The circular is under the authorship of H. B. Coats and George G. Brown.

INCREASE OF 20,000 GALLONS IN SEMINOLE GASOLINE PRODUCTION

Natural gasoline production in the Seminole area has failed to show any great increase so far during December compared with a month ago but remains well above the million gallon a day mark reached three months ago. At present the net production averages 1,099,000 gallons daily with the Little River, Seminole City and the Bowlegs Pools contributing the great bulk of the total. The Maud area promises to receive more attention over the immediate future. Several plants are nearing completion in various sections of the field and over the next 30 days enough added capacity will be placed in operation to increase the production 50,000 gallons. Considerable production is coming from pump stations during the present cold weather, and this more than offsets the decline in the volume of gas being produced in the developed fields. Of interest too is the fact production is being maintained in the older sections despite the earlier prediction these sections would show a rapid decline over the winter. The experience in the older sections has usually been that the falling off of the gas supply was also accompanied with an increase in its gasoline content allowing for about the same yield of gasoline when processed.

Of the individual pools showing the greatest change, the Bowlegs was most noticeable with respect to a decline, its production falling from 244,000 gallons daily to 214,000 gallons. The pool showing the greatest increase was the St. Louis-Pearson where the production jumped from 101,000 gallons to 125,000 gallons. The balance of the pools remained about the same except the Maud Pool, which shows an increase from 28,000 to 50,000 gallons.

Only slight changes are shown in the production figures for the individual companies, the Skelly Oil Co. adding the greatest amount of production compared to a month ago. Six units were added to the Skelly plant at Earlsboro adding about 10,000 gallons to the production daily and six more units are being set which will increase the production there still further. Within the next two weeks the Victor Gasoline Co. will start the operation of a new plant in the St. Louis Pool in Section 3-7-5 and another one in the South Little River district in Section 5-7-7 adding 20,000 gallons to their present production. As the volume of gas may be increased the plants will be expanded. The 10,000,000-foot plant being built by the Shell Petroleum Co. and the Texas Company jointly in Section 7-8-5 will further increase the production in the Maud area and is expected to be completed within the next 45 days. Within that time the Amerada Petroleum Corp. also expects to begin the operation of its new 50,000-gallon plant also in that section, and the total production from the Maud area 60 days hence may easily reach 150,000 gallons daily. Other companies have formulated plans for the construction of additional plants which will add another 50,000 gallons to the capacity of the combined plants, but these plans have been made tentatively and may not be formally announced.

PRESENT PRODUCTION NATURAL GASOLINE IN SEMINOLE DISTRICT BY POOLS
(Production shown as net daily average in gallons)

Company—	Total prod.	Seminole	Bowlegs	Earlsboro	Searight	Little River and S.L.R.	St. Louis-Pearson	Maud
Amerada Pet. Corp.	26,000	4,000	8,000	14,000	.....	.....	.....	.....
Barnsdall Oil Co.	25,000	.....	.....	25,000	.....	.....	.....	.....
Carter Oil Co.	180,000	60,000	10,000	.....	55,000	55,000	.....	.....
Crosbie & Moran	30,000	.....	.....	30,000	.....	.....	.....	.....
Cushing Ref. & Gasoline Co.	45,000	.....	.....	.....	.....	14,000	31,000	.....
Empire O. & R. Co.*	105,000	30,000	52,000	.....	.....	23,000	.....	.....
Forrest E. Gilmore Co.	40,000	.....	6,000	.....	.....	34,000	.....	.....
Gypsy Oil Co.	88,000	.....	.....	.....	.....	88,000	.....	.....
Independent Oil & Gas Co.	35,000	7,000	.....	.....	.....	28,000	.....	.....
Magnolia Pet. Co.	27,000	.....	.....	17,000	.....	.....	10,000	.....
Moran & Gillespie	25,000	.....	.....	.....	.....	.....	25,000	.....
Pure Oil Co.	46,000	14,000	16,000	.....	.....	16,000	.....	.....
Shell Pet. Corp.	70,000	.....	11,000	.....	.....	.....	59,000	.....
Sinclair Oil & Gas Co.	265,000	110,000	90,000	15,000	.....	10,000	.....	40,000
Skelly Oil Co.	45,000	.....	.....	35,000	.....	.....	.....	10,000
Victor Gasoline Co.	47,000	7,000	21,000	19,000	.....	.....	.....	.....
Total	1,099,000	232,000	214,000	155,000	55,000	268,000	125,000	50,000

*Includes the production of the Indian Territory Illuminating Oil Co.

A Practical Suggestion

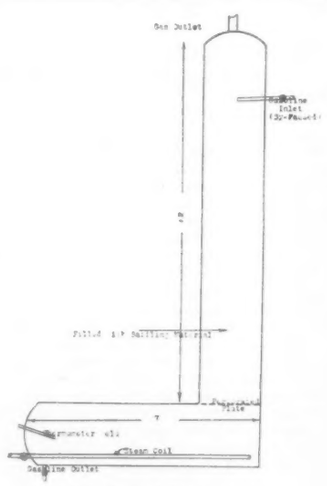
STABILIZER

To stabilize a natural gasoline is simply to remove the dissolved permanent gases that accelerate the evaporation and increase the vapor tension. The application of stabilizers is by far the most important contribution to the natural gasoline industry since the advent of the oil-absorption process. Stabilization is fractionation at pressures above atmospheric; however, stabilized natural gasoline may be manufactured by recycling all the vapors that come from the gasoline stock tanks, etc.

A highly efficient stabilizer has 20 to 30 bubble cap trays, with a heating element in bottom and a cooling element on top. Provision is made to maintain fairly high pressures and temperatures and consequently heat exchange equipment is required. The apparatus is therefore expensive, both initially and in its operation, and for that reason cannot be used at the smaller plants.

The stabilizer described here is applicable for use in the smaller plant, and while not highly efficient, it will afford a means of changing the finished product to a higher recovery and lower vapor tension. A stabilizer to handle 3,000 gallons per day may be made of 15-inch casing.

The volatile gasoline is introduced near top, which upon expanding furnishes sufficient cooling for condensation; the connection is by-passed so that if one valve freezes the other can be used. The tower is filled with steel shavings, raschig rings or other suitable baffling material. The heating is effected by steam coils made of four runs of 1-inch pipe. At some plants



A stabilizer.

a temperature of 105 degrees Fahrenheit and a pressure of 25 pounds gave good results, although experimentation is required to determine optimum operating conditions. It is important that the entire device be properly insulated.

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

SKELLY BUILDS ANOTHER PLANT ON SHAFFER RANCH

The Skelly Oil Co. will build another charcoal absorption plant on the Shaffer ranch in the West Texas area near Borger. The production from the plant will be approximately 5,000 gallons daily, but 10,000,000 feet of gas will be processed. This is the seventh charcoal absorption plant to be built by the Skelly Oil Co. in the Texas Panhandle. Because of the relatively lean gas produced and the corrosive action of the gas, this method of processing has been adopted, contrary to the general trend in the industry.

With the addition of this plant the company will be operating 10 plants in the Texas Panhandle with a combined capacity of approximately 70,000 gallons daily.

INDEPENDENT ADDS TWO MORE GASOLINE PLANTS

The Independent Oil & Gas Co.'s natural gasoline production has been given another boost through the absorption of two plants at Cassoday and Madison, Kans., formerly owned by the Manhattan Oil Co. The Cassoday plant has a capacity of 10,000 gallons and that at Madison 8,000 gallons, the former an absorption plant and the latter a compression plant. The combined production of these now approximates 8,000 gallons.

MOVING GASOLINE PLANT

HOUSTON, Tex., Jan. 14.—Humble Oil & Refining Co. is moving its natural gasoline plant equipment at Rising Star, Tex., to the Boggy Creek Field of Anderson County, Texas, and will have it in operation there within 10 days.

The plant, of the absorption type, will have a capacity of 10,000,000 feet of gas daily but at present there are approximately only 4,000,000 feet of gas in the field. Residue from the plant will be sold to the Dixie Gulf Gas Co.

NEW PLANT AT MARSHALL

Moran & Gillespie are building a 15,000-gallon natural gasoline plant in Section 20-19-4, near Marshall, Okla. The plant will be ready for operation within the next two weeks.

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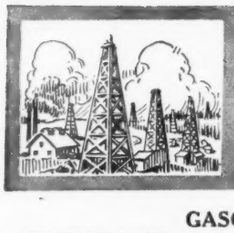
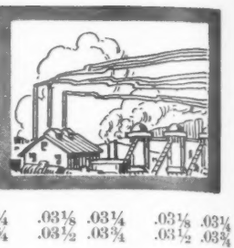


REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.



GASOLINE AND NAPHTHA

OKLAHOMA—(Group 3)—	Jan. 15		Jan. 8		Jan. 1	
50-52 450 endpoint	.07½		.07½	.07¾	.07½	.07¾
56-58 450 endpoint	.07½		.07½	.07¾	.07½	.07¾
58-60 450 endpoint	.07½	.07¾	.07½	.07¾	.07½	.07¾
*58-60 437 endpoint (U. S. Motor)	.08		.0802		.0833	
*60-62 437 endpoint	.0797		.0825		†.08¼	.08½
*60-62 400 endpoint	.0883		.085		†.085	
*64-66 375 endpoint	.0925		.0975		†.09¼	.09½
68-70 360 endpoint	.09	.09¼	.09¼	.09½	.09¼	.09¾
64-66 437 endpoint (blend)	.07½	.07¾	.07½	.08	.07¾	.08

*Weighted average prices January 15 and 7 and December 31, as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices given are general market.

NORTH TEXAS—						
56-58 450 endpoint	.07¼		.07¼		.07¼	.07½
58-60 450 endpoint	.07¼		.07¼		.07¼	.07½
58-60 437 endpoint (U. S. Motor)	.07⅜	.07½	.07⅜	.07⅝	.07½	.07¾
60-62 400 endpoint	.07¾	.08	.07¾	.08	.08	.08¼
64-66 390 endpoint	.08		.08	.08¼	.08¼	.08¾
64-66 375 endpoint	.08¼	.08½	.08¼	.08½	.08½	.08¾
68-70 360 endpoint	.09		.09		.09	.09¼
64-66 437 endpoint (blend)	.07¼	.07½	.07¼	.07½	.07½	.07¾
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.08	.08¼	.08	.08¼	.08¼	.08½
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.08	.08¼	.08	.08¼	.08¼	.08½
PENNSYLVANIA—						
52-54 Naphtha	.09¼	.09½	.09¼	.09½	.09¼	.09½
54-56 Naphtha	.09¾	.10	.09¾	.10	.09¾	.10
58-60 Gasoline	.10	.10¼	.10	.10¼	.10	.10¼
60 Gasoline	.10½	.10¾	.10½	.10¾	.10½	.10¾
62 Gasoline	.10¾	.11	.10¾	.11	.10¾	.11
64 Gasoline	.11	.11½	.12	.12¼	.12	.12¼
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.10	.11	.10	.11	.10	.11
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.07½	.07¾	.07½	.07¾	.07¾	
56-58 450 endpoint	.07½	.07¾	.07½	.07¾	.07¾	
58-60 437 endpoint (U. S. Motor)	.07½	.08	.07½	.08	.07¾	.08
60-62 400 endpoint	.08⅛	.08¾	.08¼	.08½	.08¼	.08½
64-66 375 endpoint	.08¾	.09	.09	.09¼	.09¼	.09½
68-70 360 endpoint	.09⅜	.09⅝	.09½	.09¾	.09¾	.10
64-66 437 endpoint (blend)	.07½	.08	.07¾	.08	.08⅛	.08¼

NATURAL GASOLINE

OKLAHOMA—(Group 3)—	Jan. 15		Jan. 8		Jan. 1	
Grade A, 72-79.9, 375 e.p., rec. 90%	.06¾		.07¼		.08	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05½	.05¾	.05¾	.06	.06½	.06¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¼	.05⅜	.05⅝		.06¼	.06½
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05½	.05⅝	.06	.06¼
Grade C, 80-90, 375 e.p., rec. 78%	.04¾	.05	.05¼	.05⅜	.06	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06¾		.07¼		.08	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05½	.05¾	.05¾	.06	.06½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¼		.05⅝		.06¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05½		.06	.06¼
Grade C, 80-90, 375 e.p., rec. 78%	.05		.05¼		.06	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.05½	.05¾	.06¼	.06½	.06¾	.07
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾		.06		.06½	.06¾
Grade C, 80-92, 375 e.p., rec. 78%	.05¼	.05½	.05¾	.06	.06½	
CALIFORNIA—						
75-78, 375-390 endpoint	.08	.08½	.07¼	.07⅜	.07¼	.07¾
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06½	.07	.07½		.08	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¼	.05½	.06		.06½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅜		.05¾		.06¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05⅝		.06	
Grade C, 80-90, 375 e.p., rec. 78%	.05		.05½		.06	

BURNING OIL

OKLAHOMA—(Group 3)—	Jan. 15		Jan. 8		Jan. 1	
41-43 water white Kerosene	.05¼	.05½	.05¼	.05½	.05⅜	.05⅝
42-44 water white Kerosene	.05⅜	.06	.05⅜	.06	.05⅞	.06
NORTH LOUISIANA—						
41-43 water white Kerosene	.06	.06¼	.06	.06¼	.06¼	
NORTH TEXAS—						
41-43 water white Kerosene	.05¼	.05⅜	.05⅛	.05¼	.05¼	.05½
40-42 water white Kerosene	.05⅛	.05¼	.05	.05¼	.05¼	
ARKANSAS—						
41-43 water white Kerosene	.06	.06¼	.06	.06¼	.06¼	.06½
PENNSYLVANIA—						
43 Kerosene prime white	.07	.07⅛	.07	.07⅛	.07	.07⅛
45 Kerosene water white	.07⅛	.07¼	.07⅛	.07¼	.07⅛	.07⅜
46 Kerosene water white	.07½	.07¾	.07½	.07¾	.07½	.07¾
47 Kerosene water white	.07¾	.08	.07¾		.07¾	.08
300 Mineral Seal	.07	.07¼	.07	.07¼	.07⅛	.07⅜
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.06½	.07	.06½	.07	.06½	.07
Engine distillate, 43-44, 445 endpoint	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 42-44, 480 endpoint	.07	.07½	.07	.07½	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.05¼	.05½	.05¼	.05½	.05½	.05⅝
42-44 water white Kerosene	.05⅜	.06	.05⅝	.06	.05⅞	.06

FUEL OILS

OKLAHOMA—(Group 3)—	Jan. 15		Jan. 8		Jan. 1	
Below 18 Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
18-22 Fuel Oil, per bbl.	.55	.57½	.55	.57½	.55	.57½
22-26 Fuel Oil, per bbl.	.60	.62½	.60	.62½	.60	.62½
24-26 Fuel Oil, per bbl.	.62½	.65	.62½	.65	.62½	.65
26-30 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
28-30 Fuel Oil, per bbl. (industrial)	.80	.82½	.80	.82½	.80	.82½
28-30 Fuel Oil, per bbl. (zero cold test)	.90	.92½	.90	.92½	.87½	.92½
32-36 Gas Oil (dark)	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
32-36 Gas Oil (straw color)	.02¾	.03¼	.02¾	.02⅞	.02¾	.02⅞
36-38 Distillate	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
38-40 Straw Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
NORTH TEXAS—						
Below 20 Fuel Oil	.50	.52½	.50	.52½	.50	.52½
24-26 Fuel Oil, per bbl.	.52½	.55	.52½	.55	.52½	.55
32-36 Gas Oil (straw)	.02¾	.02⅝	.02½	.02⅝	.02½	.02⅝
38-40 Straw Distillate	.03⅞	.03⅝	.03⅜	.03⅝	.03⅜	.03⅝
NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.75		.75		.75	
32-36 Gas Oil	.03		.03		.03	
ARKANSAS—						
33-36 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
32-36 Gas Oil (straw)	.03		.03		.03	
16-22 Refinery Fuel Oil, per bbl.	.75		.75		.75	
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04½	.04¼	.04½	.04¼	.04½
Bunker C Fuel, per bbl.	.80	.90	.80	.90	.80	.90
PENNSYLVANIA—						
30-34 Fuel Oil	.04⅜	.04⅝	.04⅜	.04⅝	.04⅜	.04⅝
36-40 Fuel Oil	.04¾	.04⅞	.04¾	.04⅞	.04¾	.04⅞
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03	.03½	.03	.03½	.03	.03½
*15-20 Fuel Oil, Bunker (at tide water)	.75	.85	.85	1.00	.85	1.00
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.75	.85	.75	.85
27 plus Diesel, per bbl.	.95	1.10	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, Group 3, bbl.	.60	.65	.60	.65	.60	.65
18-22 (Group 3), per bbl.	.52½	.55	.52½	.55	.52½	.55
16-20 Smackover, per bbl.	.80	.85	.90		.90	
28-30 Fuel Oil (zero)	.92½	1.00	.92½	1.00	.92½	1.00
32-36 Gas Oil, zero	.02⅞	.03⅛	.02⅞	.03⅛	.02⅞	.03⅛
32-36 Gas Oil (industrial)	.02½		.02½		.02½	
36-38 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
38-40 Straw Distillate	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾

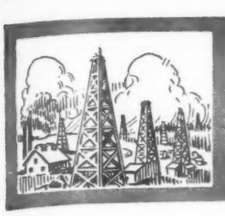
*Bunker.

LUBRICATING OIL AND WAX

OKLAHOMA—(Group 3)—	Jan. 15		Jan. 8		Jan. 1	
100 vis., 2 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
100 vis., 3 color, 20-25 cold test	.06		.06		.06	
150 vis., 3 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08	.08¼
150 vis., 4 color, 20-25 cold test	.08		.08		.08	
180 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 4 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
180 vis., 5 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
200 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 4 color, 23-28 cold test	.09⅛	.09¼	.09⅛	.09¼	.09⅛	.09¼
200 vis., 5 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
240 vis., 3 color, 25-30 cold test	.13½	.13¾	.13½	.13¾	.13½	.13¾
240 vis., 4 color, 25-30 cold test	.13	.13¼	.13	.13¼	.13	.13¼
240 vis., 5 color, 25-30 cold test	.12	.12¼	.12	.12¼	.12	.12¼
280 vis., 3 color, 25-30 cold test	.15¼	.15½	.15¼	.15½	.15¼	.15½
280 vis., 4 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
280 vis., 5 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
Cylinder Stocks:						
600, steam refined, light green	.09	.11	.09	.11	.08	.10
600, steam refined, dark green	.08	.09	.08	.09	.08	.09
190-200 vis. @ 210 Bright Stock	.30	.33	.30	.33	.30	.32
150-160 vis. @ 210 Bright Stock	.28	.31	.28	.31	.28	.29
Waxes:						
124-126 White Crude Scale Wax	.05		.05		.04¾	.05
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.08¼	.08½	.08¼	.08½	.08¼	.08½
36 Miners' Neutral	.07⅛	.07½	.07¼	.07½	.07⅛	.07½
150, 3 color	.21½	.22	.21½	.22	.21½	.22
180, 3 color	.25½	.26	.25½	.26	.25½	.26
200, 3 color	.28½	.29	.28½	.29	.28	.28½
220, 3 color	.30½	.31	.30½	.31	.30½	.31
600, steam refined	.23½	.24	.23½	.24	.23½	.24
635, steam refined	.28½	.29	.28½	.29	.27½	.28
650, steam refined	.29½	.30	.29½	.30	.29½	.30
600, Pennsylvania flash	.31½	.32	.31½	.32	.31½	.32
630, Pennsylvania flash	.36½	.37	.36½	.37		
*550, E filtered	.16	.16½	.16	.16½	.16	.16½
*600, E filtered	.17½	.18	.17½	.18	.17½	.18
600, E filtered	.26½	.27	.26½	.27	.26½	.27
600, D filtered	.28½	.29	.28½	.29	.28½	.29
550, E filtered	.15½	.16	.15½	.16	.15½	.16
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.39	.40	.39	.40	.39	.40
†122-124 White Crude Scale Wax	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜
†124-126 White Crude Scale Wax	.05⅜	.05½	.05⅜	.05½	.05⅜	.05½

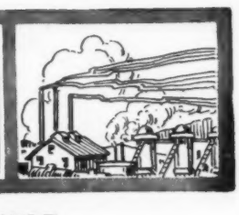
*At Warren, Pa. †At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06½	.07	.06½	.07	.06½	.07
No. 3 color, 200 vis., pale oil	.08½	.09	.08½	.09	.08½	.09
No. 3 color, 300 vis., pale oil	.11	.11½	.11	.11½	.11	.11½
No. 3½ color, 500 vis., pale oil	.12½	.13	.12½	.13	.12½	.13
No. 4 color, 750 vis., pale oil	.15	.15½	.15	.15½	.15	.15½
No. 5 to 6 color, 200 vis., red oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
No. 5 to 6 color, 300 vis., red oil	.09¼	.09½	.09¼	.09½	.09¼	.09½
No. 5 to 6 color, 500 vis., red oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 5 to 6 color, 750 vis., red oil	.13¼	.14	.13¼	.14	.13¼	.14
No. 2½ color, 200 vis., pale filtered	.11¾	.12¼	.11¾	.12¼	.11¾	.12¼
No. 2½ color, 300 vis., pale filtered	.13½		.13½		.13½	
No. 2½ color, 500 vis., pale filtered	.15½	.16	.15½	.16	.15½	.16
No. 2½-3 color, 750 vis., pale filtered	.18	.20	.18	.20	.18	.20
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13¼	.13	.13¼	.13	.13¼
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.



Red Neutral:						
200 vis., 4½-5 color	.11¼	.11½	.11¼	.11½	.11¼	.11½
300 vis., 5-6 color	.11¾	.12	.11¾	.12	.11¾	.12
400 vis., 5-6 color	.13½	.14	.13½	.14	.13½	.14
500 vis., 4½-5 color	.15¼	.15½	.15¼	.15½	.15¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.15½	.15¾	.15½	.15¾	.15½	.15¾

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Jan. 15	Jan. 8	Jan. 1
Gasoline, U. S. Motor, 58-60, 437	.10½	.10½	.10½
Kerosene, water white, 41-43	.09	.09	.09
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05	1.05	1.05
†Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00	2.00
Gas Oil, 32-36 gravity	.05¼	.05¼	.05¼
25 pale Paraffin Oil	.11¾	.11¾	.11¾
28 pale Paraffin Oil	.07½	.07½	.07½
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.11	.11	.11
225 red Paraffin Oil	.09½	.09½	.09½
200 red Paraffin Oil	.09	.09	.09
Refined Wax:			
120-122 a.m.p., per lb.	.05⅝	.05⅝	.05⅝
125-127 a.m.p., per lb.	.05⅞	.05⅞	.05⅞
130-132 a.m.p., per lb.	.06¾	.06¾	.06¾
133-135 a.m.p., per lb.	.07⅜	.07⅜	.07⅜
135-137 a.m.p., per lb.	.07¾	.07¾	.07¾
Petrolatum in barrels, carload lots, per pound:			
Dark green	.02	.02	.02
Amber	.03½	.03½	.03½
Extra amber	.03¾	.03¾	.03¾
Cream	.06½	.06½	.06½
Lily white	.07½	.07½	.07½
Snow white	.08½	.08½	.08½

*Lighterage, 5.0c a barrel extra. †Lighterage, 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Jan. 15		Jan. 8		Jan. 1	
Gasoline, U. S. Motor, 58-60 437, in cases	.2640		.2640		.2640	
Kerosene, standard white, in cases	.1765		.1765		.1765	
Kerosene, water white, in cases	.1890		.1890		.1890	
600, steam refined cylinder stocks, in bbls.	.31	.32	.33	.34	.30	
635, steam refined	.32	.33	.34	.35	.31	
650, steam refined	.37	.38	.37	.38	.34	
600, Pennsylvania flash	.39	.40	.39	.40	.38	
630, Pennsylvania flash	.43	.44	.43	.44	.42	
600, Warren E	.34	.35	.34	.35	.35	
600, Oil City E	.33		.33		.34	
Light 140-150 Bright Stocks	.49	.50	.49	.50	.46	
Dark 140-150 Bright Stocks	.48	.48½	.48	.48½	.44	

LOS ANGELES EXPORT PRICES

	Jan. 15		Jan. 8		Jan. 1	
Kerosene, water white	.05½	.06	.05½	.06	.05½	.06
U. S. Motor Gasoline, 53-55, 437 e.p.	.07½	.08	.08	.08¼	.08	.08¼

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective August 15, 1928)*

Gravity—	Richfield Torrance Olinda-Brea Alamitos-Hills Seal Beach Huntington Beach Athens Rosecrans-Dom'guez Inglewood ¹	Whittier La Habra Coyote Hills ²³	Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge Buena Vista Hills ³	Montebello ⁴	Santa Fe Springs ⁵	Coalinga ⁶	Wheeler Ridge ⁷	Orcutt ⁸	Ventura ⁹
14 to 14.9	.85	.85	.75	.85	....	.75	.75	.85	.85
15 to 15.9	.85	.85	.75	.85	....	.75	.75	.85	.85
16 to 16.9	.85	.85	.75	.85	....	.75	.75	.85	.85
17 to 17.9	.85	.85	.75	.85	....	.75	.75	.85	.85
18 to 18.9	.85	.85	.75	.85	....	.75	.75	.85	.85
19 to 19.9	.85	.85	.75	.85	....	.75	.75	.85	.85
20 to 20.9	.85	.85	.77	.86	....	.77	.77	.85	.86
21 to 21.9	.89	.88	.79	.89	.89	.79	.79	.86	.86
22 to 22.9	.93	.91	.82	.92	.92	.82	.82	.87	.87
23 to 23.9	.97	.94	.86	.95	.95	.85	.85	.90	.90
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.93	.94
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.95	.98
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	.97	1.02
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10
29 to 29.9	1.21	1.16	1.16	1.13	1.13	1.06	....	....	1.14
30 to 30.9	1.25	1.20	1.22	1.16	1.16	1.10	....	....	1.18
31 to 31.9	1.30	....	1.28	....	....	1.25	1.14	....	1.23
32 to 32.9	1.35	....	1.34	....	....	1.30	1.18	....	1.28
33 to 33.9	1.41	....	1.40	....	....	1.35	1.22	....	....
34 to 34.9	1.47	....	1.46	....	....	1.40	1.26	....	....
35 to 35.9	1.53	....	....	....	....	1.45	1.30	....	....
36 to 36.9	1.59	....	....	....	....	1.50	....	....	....
37 to 37.9	1.65	....	....	....	....	1.55	....	....	....
38 to 38.9	1.71	....	....	....	....	1.60	....	....	....
39 to 39.9	1.77	....	....	....	....	1.65	....	....	....
40 to 40.9	1.83	....	....	....	....	....	....	....	....
41 to 41.9	1.89	....	....	....	....	....	....	....	....
42 to 42.9	1.95	....	....	....	....	....	....	....	....

*Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity. Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 14 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33.9 gravity; Lost Hills, 14 to 34.9 gravity.

Columns 8 and 9 posted by Union Oil Co. only.

†On October 2 Standard Oil Co. of California discontinued contracting for purchase of Kern River crude and on October 20 established following prices on grades below 14 gravity: 11 to 11.9 degrees at 45 cents, 12 to 13 degrees at 50 cents.

On December 1 the Union Oil Co. adopted the above schedule of the Standard on Kern River crude and in addition posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11-11.9 gravity, 45 cents; 12 to 12.9 gravity, 55 cents; and 13 to 13.9 gravity at 65 cents. All grades of Elwood crude were cut 7 cents.

CRUDE OIL GRAVITY TABLE

Gravity—	Okla., Kans., N. C. Tex. ¹	No. La. and Arkansas ²ª	Smackover, Ark. ³ª	Stephens, Ark. ⁴ª	Gray County (Texas Panhandle) ⁵ª	Salt Creek, Wyo. ⁶ª	Grade B & Light Crude (G. Coast) ⁷ª	Somerset (South Central Texas) ⁸ª
24 and above	....	....	.90	....	....	....	....	....
Below 24	....	....	.75	....	....	....	....	....
Below 25	.60	....	....	....	....	....	1.15	....
25 to 25.9	.67	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	....	....	....	....
26 to 26.9	.74	....	....	....	....	....	1.19	....
27 to 27.9	.81	....	....	....	....	....	1.21	....
Below 28	....	.81	....	.75	.68	....	....	....
28 to 28.9	.88	.88	....	.77	.68	....	1.23	....
29 to 29.9	.95	.95	....	.79	.75	.95	1.25	....
30 to 30.9	1.02	1.02	....	.81	.82	1.02	1.27	....
31 to 31.9	1.09	1.09	....	.83	.89	1.09	1.29	....
32 to 32.9	1.16	1.16	....	.85	.96	1.16	1.31	1.05
33 to 33.9	1.21	1.21	....	....	1.01	1.21	1.33	1.07
34 to 34.9	1.26	1.26	....	....	1.06	1.26	1.35	1.09
35 to 35.9	1.31	1.31	....	....	1.11	1.31	1.37	1.11
36 to 36.9	1.36	1.36	....	....	1.16	1.36	....	1.13
37 to 37.9	1.41	1.41	....	....	1.21	1.41	....	1.15
38 to 38.9	1.46	1.46	....	....	1.26	....	....	1.17
39 to 39.9	1.51	1.51	....	....	1.31	....	....	....
40 to 40.9	1.56	1.56	....	....	1.36	....	....	....
41 to 41.9	1.61	1.61	....	....	1.41	....	....	....
42 to 42.9	1.66	1.66	....	....	1.46	....	....	....
43 to 43.9	1.71	1.71	....	....	1.51	....	....	....
44 and above	1.76	1.76	....	....	1.56	....	....	....

Column 1—Magnolia Petroleum Co. posted schedule August 2, 1928, making price below 25 gravity 60 cents per barrel, 25-25.9 gravity 67 cents, 26-26.9 gravity 74 cents, and 27-29.9 gravity 75 cents, 30.30.9, 90 cents, and 31-31.9, $1.05, with balance of the price schedule as shown.

Oklahoma—Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., Carter Oil Co., The Texas Company, July 26.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas, Iatan and Panola) (Iatan posted at flat price of 93 cents by Magnolia on January 14, 1928), Currie, Nocona and Moran. Prairie, Sinclair and Gulf, The Texas Company, Humble Oil & Refining Co., July 26.

Kansas—Prairie, Sinclair, Carter, The Texas Company, July 26.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer, and El Dorado only], Standard Oil Co. of Louisiana, Louisiana Oil Refining Corp., and Gulf Refining Co., August 2. Magnolia Petroleum Co. schedule effective August 7 applies to Pine Island, Haynesville, Bull Bayou, Louisiana, and El Dorado, Ark., light crude. The Texas Company August 8 posted prices below 28 gravity at 7 cents differential per degree with minimum of 60 cents for all below 25 gravity.

Column 3—February 6, Louisiana Oil Refining Corp.; February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co., and on February 10, Atlantic Oil Producing Co.

Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., August 8.

Column 5—Humble Oil & Refining Co., July 26.

Column 6—Midwest Refining Co., July 26. All crude over 37 gravity $1.41 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends 35 and above). March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. and The Texas Company posted 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)	.80
Other fields	See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE
Carson and Hutchinson

Below 32 gravity	$ .69
32-32.9	.76
33-33.9	.81
34-34.9	.86
35-35.9	.91
36-36.9	.96
37-37.9	1.01
38-38.9	1.06
39-39.9	1.11
40-40.9	1.16
41-41.9	1.21
42-42.9	1.26
43-43.9	1.31
44 and above	1.36

Wheeler County

Below 30 gravity	$ .65
30-30.9	.72
31-31.9	.79
32-32.9	.86
33-33.9	.91
34-34.9	.96
35-35.9	1.01
36-36.9	.106
37-37.9	1.11
38-38.9	1.16
39-39.9	1.21
40-40.9	1.26
41-41.9	1.31
42-42.9	1.36
43-43.9	1.41
44 and above	1.46
Gray County	See gravity table

Humble Oil & Refining Co., and Magnolia Petroleum Co., July 26.

WEST TEXAS

Iatan*	Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler and Glasscock (July 26)‡	$ .65
Chalk†	.80

*Includes Howard County and Westbrook Fields. Marland Refining Co. pays $1.05 for Howard County crude, effective May 21.
†Magnolia Petroleum Co., January 14, 1928.
‡Posted by Humble Oil & Refining Co., Magnolia Petroleum Co., and Gulf Pipe Line Co.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (Below 36 gravity April 11)	$ .75
Bellevue (Feb. 27, 1927)	1.25
Urania (Oct. 16, 1928)	.90
East El Dorado (March 16, 1927)	1.00
Other fields	See gravity table

*Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., and Magnolia Petroleum Co.; (Magnolia Petroleum Co. posted Cotton Valley February 8); Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange Boling, Sour Lake, Humble, Sugarland, Raccoon Bend, High Island, Pierce Junction and Spindletop.)

Grade A (March 14)*	$1.20
Grade B	See gravity table
Jennings, La. (March 14)†	$1.05
Saratoga, Batson, Daytona, (March 14, 1927)‡	1.20
Markham (March 14)§	1.00
High Island (December 14)¶	1.00

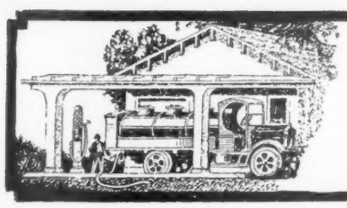
*Humble Oil & Refining Co. and other major buyers. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company.
¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective July 27, 1928)

Rock Creek, Wyo.	$1.33
Salt Creek	See gravity table
Big Muddy	1.33
Grass Creek, heavy	.90
Grass Creek, light	1.43
Mule Creek (May 1)	1.10
Elk Basin	1.48
Lance Creek	1.48
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.65
Rex Lake (February 22)	1.10
Osage	1.48
Lost Soldier (contract)	.95
Hamilton Dome (March 14, 1927)	.85
Greybull-Torchlight	1.48
Cat Creek (Montana)	1.48
Sunburst (Montana) (May 18, 1928)	1.65
Artesia	1.08
Hogback (New Mexico)	1.43

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Re-

(Continued on Page 130)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Jan. 15.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Chicago dist.	15.0	16 0	...	12 0
Decatur, Ill.	15.2	15.0	...	12 1
E. St. Louis	14 4	16 4	...	11.2
Joliet	15 4	17.4	...	12.3
Peoria	15 2	14.0	...	12 1
Quincy	15.2	17 2	...	11.9
Davenport, Ia.	18.5	20.5	3 0	12 3
Des Moines	18.5	18 5	3.0	12 3
Keokuk	18.5	20 5	3 0	12 3
Sioux City	18 1	20.1	3 0	11 9
Duluth, Minn.	18.5	20.5	2.0	12 9
Mankota	18 1	20.1	2 0	12.7
Minneapolis	18.2	20 2	2 0	12.9
La Crosse, Wis.	18 2	20 2	2.0	13 0
Milwaukee	17.1	19.1	2.0	11 9
Madison	17.3	19.3	2 0	12.1
Detroit, Mich.	18.8	20 8	3 0	13 7
Grand Rapids	18 7	20 7	3 0	13 6
Saginaw	18.9	20 9	3 0	13 8
Evansville, Ind.	18.0	20.0	3 0	13.0
Fort Wayne	18.4	18.4	3 0	13 4
Indianapolis	18.2	18 2	3 0	13 2
South Bend	18.4	20 4	3.0	13.4
Fargo, N. D.	19.9	19.9	2.0	14 9
Huron, S. D.	20.3	22 3	4 0	13 7
Sioux Falls	19.1	21.1	4.0	13.4
K. C., Mo.*	17 9	17 9	3 0	10.6
Springfield*	17.8	19.8	3 0	11.5
St. Louis*	16.9	16 9	2 5	11 3
St. Joseph*	17.5	17 5	3 0	11 2
Wichita, Kans.	15 8	17 8	2.0	10 8
Bartlesville, Ok.	16.5	18 5	3 0	10.5

*State tax 2 cents; remainder city tax.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14 7	11 9
V. M. & P. naphtha	16 2	12 9
Cleaner's naphtha	18 0	13 9
Stanisol	19.0	14.9

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting. Effective January 5.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9 0
100 to 799 gallons	8 0
800 or more gallons	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	22 0	24.0	4 0	16.5
Augusta	22 0	24 0	4.0	15 5
Macon	22.0	22 0	4.0	16 5
Savannah	21 0	23 0	4 0	14 5
Birm'ham, Ala.	22.0	24 0	4 0	16.0
Mobile	22.0	24.0	4.0	15 0
Montgomery	20 0	21 0	4 0	16.5
Clarks'le, Miss.	22 0	24 0	5.0	13.0
Jackson	19.0	21.0	5 0	14 5
Natchez	20.0	22.0	5 0	14 5
Gulfport	23.5	25 5	5 0	14 0
Vicksburg	21 5	23 5	5.0	14 0
Jack'ville, Fla.	23 0	25.0	5 0	13 5
Miami	24 0	26.0	5 0	15 5
Pensacola	24.0	26.0	5 0	13 5
Tampa	23 0	25.0	5.0	13 5
Lexington, Ky.	21 0	22.0	5 0	15.5
Covington	22.0	22 0	5.0	15 5
Louisville	21.0	23.0	5 0	15 0
Ashland	22 0	24 0	5.0	15 5
Catlettsburg	22.0	24.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulf port tax includes privilege tax of 2 cents in addition to state tax.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
San Francisco	17.0	21 0	3.0	15 5
Los Angeles	16 5	20.5	3.0	15.5
Reno, Nev.	22 0	26 0	4 0	19 0
Portland, Ore.	17 5	21 5	3.0	16 5
Seattle, Wash.	16.5	20.5	2.0	16.5
Tacoma	16.5	20.5	2.0	16 5
Spokane	20.5	24.5	2.0	20 5
Phoenix, Ariz.	18.0	22.0	4.0	20.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	16 0	20.0	2 0	12.0
Fort Worth	13.0	16.0	2.0	12.0
Houston	16 0	20 0	2.0	13.0
San Antonio	13.0	17 0	2.0	16 0
El Paso	17 0	20.0	2.0	16 0
Texarkana	16.5	20 5	3.0	13 0
Muskogee, Ok.*	16 0	18 0	3.0	12.0
Okla. City*	16 0	18.0	3.0	12 0
Tulsa*	17 0	19.0	3.0	10 0
Ft. Smith, Ark.	16.0	19.0	5.0	13.0
Little Rock	19.0	22.0	5.0	13 0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Omaha	17 25	19 25	2.0	12 25
McCook	18.75	20 75	2.0	13 75
Norfolk	17.75	19.75	2 0	12 75
N. Platte	18.75	20 50	2.0	13 50
Scotsbluff	18.75	20 75	2.0	13 25

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Denver, Colo.	17 0	20 0	3.0	14 5
Pueblo	17.0	20.0	3.0	14.5
Grand Junction	22.5	25 5	3.0	18.0
Casper, Wyo.	19 0	22 0	3.0	13 0
Cheyenne	20 0	23.0	3.0	14 5
Butte, Mont.	23.5	26 5	3.0	19 0
Helena	23 5	26 5	3.0	19 0
Salt Lake, Utah	22.0	25 0	3.5	17 0
Albu'que, N. M.	22.0	25.0	5 0	17.0
Boise, Idaho	24 5	27.5	4 0	19.0
Twin Falls	24.5	27.5	4.0	19 0

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlantic City	17 0	20 0	2.0	13.0
Newark, N. J.	17.0	20 0	2.0	13 0
Annapolis, Md.	19.0	22.0	4.0	13 0
Baltimore	19 0	22 0	4 0	13.0
Cumberland	19 0	22 0	4 0	13.0
Washington	17 0	20.0	2.0	13.0
Danville, Va.	20 0	23 0	5 0	13.0
Norfolk	20 0	23 0	5 0	13 0
Petersburg	20.0	23 0	5 0	13 0
Roanoke	20 0	23 0	5.0	13 0
Richmond	20.0	23.0	5.0	13.0
Ch'rlst'n, W. V.	19.0	22 0	4.0	13 0
Keyser	19 0	22 0	4.0	13 0
Parkersburg	19.0	22 0	4.0	13.0
Wheeling	19 0	22 0	4.0	13 0
Charlotte, N. C.	19.0	22 0	4.0	13 0
Hickory	19.0	22.0	4.0	13.0
Mt. Airy	19 0	22 0	4 0	13 0
Salisbury	19.0	22 0	4.0	13 0
Ch'lston, S. C.	20.0	23 0	5.0	13.0
Columbia	20.0	23 0	5.0	13 0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	18 0	20 0	...	15 0
New York*	18 0	20 0	...	15 0
Buffalo	18.0	20.0	...	14 0
Rochester	18 0	20.0	...	14 0
Syracuse	18 0	20 0	...	15.0
Boston, Mass.	17 0	18 0	...	15 0
Augusta, Me.	21 0	22.0	4 0	15.0
Manch't'r, N. H.	21.0	22 0	4.0	15 0
Burlington, Va.	20 0	21.0	4.0	15 0

*Prices in steel barrels.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	17.5	20.5	5.0	16.0
Baton Rouge	16.0	19.0	4.0	14.5
Alexandria	17.0	20.0	4.0	16.0
LaFayette	17.0	20.0	4.0	14.0
Lake Charles	17.5	20.5	4.0	16.0
Shreveport	17.5	20.5	4.0	15.0
Knoxv'le, Tenn.	19.0	22.0	3.0	16.0
Memphis	17.0	20.0	3.0	12.5
Chattanooga	18.5	21.5	3.0	16.0
Nashville	18.0	21.0	3.0	16 0
Bristol	19.0	22.0	3.0	14.0
Lit. Rock, Ark.	19.0	22.0	3.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
All Ohio points	19.0	20.0	3.0	12.0

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	15.0	*20 0	...	14 0
Philadelphia	15.0	*20.0	...	14.0
Scranton	15.0	*20 0	...	14.0
Allentown	15.0	*20.0	...	14 0
Altoona	15 0	*20.0	...	14.0
Erie	15.0	*20.0	...	14.0
Dover, Del.	18.0	20.0	3 0	14.0
Wilmington	18 0	20.0	3 0	14 0
Springf'd, Mass.	18 0	18 0	...	14.0
Worcester	18.0	18 0	...	14.0
Boston	18.0	18 0	...	14 0
Providence, R.I.	20 0	*20.0	2.0	14.0
Hartford, Conn.	20 0	20 0	2.0	14 0
New Haven	20*0	20.0	2.0	14 0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state.

TANK WAGON CHANGES

January 4—Standard Oil Co. of Louisiana advanced gasoline tank wagon and service station prices 2 cents in Louisiana due to increase in state tax from 2 to 4 cents.

January 8—Standard Oil Co. of Louisiana reduced kerosene tankwagon 1 cent at Bristol, Tenn.

January 9—Continental Oil Co. reduced gasoline tank wagon and service station 2 cents at Pueblo, Colo.

January 11—Standard Oil Co. of Louisiana reduced kerosene tankwagon price 1½ cents at Lafayette, La.

January 15—Atlantic Refining Co. reduced gasoline tank wagon 1 cent in Delaware and Pennsylvania.

CRUDE PRICE CHANGES

January 11—Magnolia Petroleum Co. reduced Corsicana heavy and Luling crudes to 80 cents, a reduction of 20 cents.

GULF COAST MARKETS WEAKER ON LUBRICANTS

HOUSTON, Tex., Jan. 15.—A weaker tone was reflected in Gulf Coast lubricating oil markets as the week opened and Tuesday there was some cutting of prices from some sources. The general market was being held despite concessions. Fuel oils, on the other hand, showed a tendency to stronger prices.

The weakening of lubricating stocks probably is due to a combination of several factors. There has been a seasonal lull in demand, coupled with the fact that refiners apparently have made no effort to curtail production. This unhealthy situation was aggravated by a 20-cent cut in Mirando crude last week. The better outlook for fuel is occasioned by a tendency of refiners to cancel gas contracts and to use their accumulated stocks of fuel oil for fuel. One large company operating two refineries on the Gulf Coast changed over from gas to oil during the week. Market quotations are steadier at previous postings. Gas oil continues firm with any available spot material being bought up rapidly.

PENNSYLVANIA MARKETS

OIL CITY, Pa., Jan. 12.—Gasoline was not moving so briskly in the Pennsylvania refined market during the past week. Kerosene was in fair condition, a trifle better than has been the case. Fuel oil was better, the cold weather resulting in an increased demand from the burning trade.

The demand for cylinder stocks continued at a terrific pace. It is the great consumption of these petroleum products which has been the big feature of recent months in the refined market and it is to this that the recent Pennsylvania grade crude price advances are credited. Some refiners and marketers state that cylinder stocks are now at their peak and that demand was not quite so great during the past few days as it has been. Bright stocks are better. Wax is not so good as it has been on account of a drop in export demand.

ENGINEERS TO DISCUSS TRANSPORTATION OF OIL

A program of unusual interest marks the annual oil transportation meeting of the Mid-Continent Section, American Society of Mechanical Engineers, to be held Friday evening, January 18, in the Roof Garden of the Tulsa Club Building, Tulsa. "Economics of Electric Pipe Line Pumping" is the subject of a paper to be presented by J B.. Thomas, chief engineer of the Texas Power & Light Co., Dallas, Tex. Discussion of the paper is to be led by F. E. Warterfield, engineer of the Oklahoma Pipe Line Co., Muskogee, Okla.

A moving picture showing scenery and industrial development in Japan, introducing the World Engineering Congress to be held in Tokio next fall, will be explained by A. J. Kerr, secretary of the Mid-Continent Section. "Highlights of the Annual New York Meeting" will be given by William D. Moorer, Tulsa engineer, who attended the meeting as a delegate.

The meeting is open to the public and pipe line men, whether members of the American Society of Mechanical Engineers or not, are invited to attend. William G. Heltzel, of the Sinclair Pipe Line Co., is chairman of the Mid-Continent section.

CRUDE OIL PRICES

(Continued from Page 129)

fining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

Luling (January 11)*	$ .80
Mirando (January 7)†	.80
Rockdale-Minerva (April 15):	
Below 28 gravity	1.25
28-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	...
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.

EASTERN STATES

(Effective January 4, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.10
Bradford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (July 13)	1.55
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (December 17)	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (December 17)	1.90
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Sept. 14, 1928)	1.75
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (August 1)	.85

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective July 27, 1928)

Lima	$1.60
Wooster (October 17)	1.77
Illinois	1.55
Indiana	1.37
Princeton	1.65
Plymouth	1.28
Waterloo (November 17, 1926)	1.35
Western Kentucky* (Sept. 17, 1928)	1.63
Saginaw, Mich., Saginaw Sand (February 10)†	1.89
Saginaw, Mich., Berea Sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 16)‡	1.50
Oil in lines in Stoll Oil Refining Co. in Oil City, Ky. (Oct. 1, 1928)§	1.76
Oil Springs (Canada)¶	2.07
Petrolia (Canada)¶	2.09

*Posted by Ohio Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.

MEXICAN CRUDE

Panuco heavy (f.o.b. Mexican ports)	$1.15

Note—Due to the fact that the exportation of Tuxpan light crude has become a negligible factor, prices will no longer be published.

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Oil Securities Mark Time With Market

A Few Issues Score Advances. Standard of New York Active on Bulges. Indiana, Humble, Texon and Vacuum Go Upward

By Special Correspondent

In a somewhat listless market Monday the oil securities shared the vicissitudes of the general list. Standard Oil, (New York) was taken freely at the best. There was a revival of activity and strength in Standard Oil Co. (Indiana) which was interpreted in some quarters as competitive buying. The stock closed 2 points higher at 9½. Vacuum Oil Co. advanced to a new high at 125½, a gain of 8 points. Humble Oil & Refining Co., Texon and Standard Oil of Ohio also advanced.

Prairie Pipe Line

The report of the Prairie Pipe Line Co. for 10 months ended October 31, 1928, filed with New York Stock Exchange shows net income of $15,535,252 after interest, federal taxes, etc., equivalent to $19.18 a share earned on 810,000 shares of stock.

Detailed income account of Prairie Pipe Line Co. for year ended December 31, 1927, compares as follows:

	1927	1926
Total revenue	$33,764,864	$28,319,056
Exp. and ord. taxes	14,650,758	13,422,374
Operating profit	$19,114,106	$14,896,682
Other income	1,957,088	1,667,374
Total income	$21,071,194	$16,564,056
Income deductions	28,195	38,315
Federal taxes	2,715,288	2,078,954
Net income*	$18,327,711	$14,446,787
Dividends	8,100,000	6,480,000
Surplus	$10,227,711	$7,966,787
*Per share earned on $10,000 shares	$22.63	$17.83

Consolidated balance sheet of Prairie Pipe Line Co. and Pure Oil Pipe Line Co. of Texas as of October 31, 1928, compares with December 31, 1927, as follows:

Assets	Oct. 31, 1928	Dec. 31, 1927
Property	$105,416,382	$102,266,173
Government secur.	23,402,328	50,799,087
Current assets	43,180,402	10,137,054
Deferred assets	53,567	59,418
Unadjusted debits	$77,608	$22,271
Total	$172,930,287	$164,084,003
Liabilities		
Capital stock	$81,000,000	$81,000,000
Current liabilities	600,272	2,434,881
Reserve for taxes	3,825,508	3,548,328
Accrued depr.	38,316,301	35,597,913
Other unadjusted credits	74,661	21,898
Corporate surplus	49,113,545	41,480,983
Total	$172,930,287	$164,084,003

In listing application to New York Stock Exchange covering 4,050,000 shares of Prairie Pipe Line Co. $25 par capital stock, it is pointed out that company operates solely as a common carrier, under jurisdiction of Interstate Commerce Commission, engaged in the interstate transportation of crude petroleum by pipe lines.

It owns no producing properties, no refineries, and buys no oil except as needed for its fuel and shortage requirements.

Its principal shipper is Prairie Oil & Gas Co., which purchases oil from numeroue producers in addition to producing oil on its own properties. Prairie pipe lines are connected to approximately 7,000 properties, having about 89,900 producing wells. Approximately 5 per cent of its business is derived from shippers other than Prairie Oil & Gas Co.

Prairie's oil transportation system is the largest in the industry, including approximately 12,500 miles of trunk and gathering pipe lines, 3,000 miles of telegraph and telephone lines, 44 main line pumping stations and 84 field pumping stations. The system has a delivery capacity of over 200,000 bbls. daily, of which 160,000 bbls. capacity is eastbound through Carrollton, Mo. Company's gathering system is connected to practically all principal oil fields in Kansas, Oklahoma and Texas.

Prairie Pipe Line's total oil deliveries for 1927 were 64,525,904 bbls., compared with 50,688,581 bbls. in 1926, and 52,392,472 bbls. in 1925.

Record of revenue barrels of oil gathered by company's system during the past five years follows:

1928—Estimated to be same as 1927.
1927—59,169,012 bbls.
1926—50,901,895 bbls.
1925—52,678,607 bbls.
1924—49,198,520 bbls.

Company agrees to publish statement of earnings quarterly.

Income account of Prairie Pipe Line Co. for 10 months ended October 31, 1928, follows: Total revenue, $28,925,831; expenses, $12,456,210; ordinary taxes, $992,567; operating profit, $15,477,054; other income, $2,122,180; total income, $17,589,234; income deductions, $45,982; federal taxes, $2,008,000; net income, $15,535,252; dividends, $8,505,000; surplus, $7,030,252.

Petroleum & Trading Corp.

A new investment company of the management type, formed to invest and trade in oil securities, but which also has general power to engage in oil and other industrial enterprises, has been formed by Carl H. Pforzheimer with the title of Petroleum & Trading Corp. Authorized capital is 400,000 $25 par Class A 5 per cent cumulative shares, also entitled to receive 75 per cent of all additional dividends, and 10,000 Class B no par shares entitled to 25 per cent of dividends after 5 per cent payment on Class A shares.

First board of directors will consist of persons associated with Carl H. Pforzheimer & Co. Latter is receiving subscriptions for Class A stock at $25 a share. Class B stock has been issued to Carl H. Pforzheimer & Co. for sufficient cash to cover organization expenses. Class B stock has full voting power except on default of 5 per cent in Class A dividends.

Plymouth Oil

Plymouth Oil Co. declared a dividend of 50 cents, payable February 1 to stock of record January 17. On December 18, last year, a dividend of the same amount was paid.

Ohio-Kentucky Gas

Issue of $1,500,000 first mortgage bonds of Ohio-Kentucky Gas Co. has been sold to a New York investment house, which will be offered to yield about 6½ per cent. The corporation has closed an important contract with United Fuel Gas Co., subsidiary of Columbia Gas & Electric Corp.

Standard Oil Co. of New Jersey

Trustees of the stock acquisition plan participated in by employes of Standard Oil Co. of New Jersey and subsidiaries state that the price of the shares to be bought by subscribers in the third acquisition plan has been fixed at $47. This plan dates from January 1, 1929, and the price fixed will be maintained for the first six months. It is based on the average price made in transactions on the stock market in the last three months of 1926.

Gilmore Consolidated

Plans have been completed for the merger of the Gilmore Oil Co., E. J. Miley Oil Co., and Bolsa Chica Oil Corp. into a new company to be known as Gilmore Consolidated Oil Co. It will have producing, refining and distributing facilities. Officers and financing plans will be announced later.

El Paso Natural Gas

The following have been elected directors of the El Paso Natural Gas Co.: J. W. Colvin, A. C. Howard, C. M. Weld, W. J. K. Vanston, H. U. Gade, Paul Kayser, president, and H. G. Frost, vice president and general manager. The executive committee will be composed of Paul Kayser, J. W. Colvin and W. J. K. Vanston.

Shell Transport & Trading

Reports from Madrid are that an agreement has been signed between Shell Transport & Trading Co. and Spanish government whereby Shell Transport & Trading is to receive £1,100,000 for petroleum installations in Spain which have been taken over by Spanish oil monopoly has not yet been confirmed in London but it is stated at Shell headquarters that such an agreement is expected to be signed this week.

Solar Refining

Stockholders of Solar Refining Co., at annual meeting approved reduction in par value of common stock to $25 from $100

TWENTY REPRESENTATIVE STOCKS

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb was as follows:

Jan. 14	83.32	Nov. 26	83.56
Jan. 7	84.19	Nov. 19	80.55
Dec. 31	80.19	Nov. 12	78.27
Dec. 24	78.43	Nov. 5	75.99
Dec. 17	78.43	Oct. 29	75.02
Dec. 10	77.65	Oct. 20	70.05
Dec. 3	83.67	Oct. 13	68.03
Oct. 6	83.56	Oct. 6	57.55
Sept. 29	67.33		
Sept. 22	67.12		
Sept. 15	67.66		
Sept. 8	66.76		
Aug. 27	65.79		

INDEPENDENT OILS ON THE NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla. Members New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	For week ended January 11 Sales	Open	High	Low	Last	Change
$6.75	.45	2 1/16	.55	1½	.60	$5	Amer. Con. Oilfields	17,100	....	70	60	65	....
..	..	7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	25,500	8½	8⅝	7⅝	8⅛	+ ½
..	..	2¾	1	4½	2¼	$10	Argo Oil	500	3¼	3¼	3	3	— ½
85¼	60	40	20½	55	32⅞	N.P.	British American	No sales.					
28⅜	9¼	28¼	15½	4½	3⅞	25c	Carib. Syndicate (new)	12,700	....	4⅜	4	4	— ⅛
..	..	58¾	40¼	90⅞	54	$20	Cities Service	87,600	94¼	95	88⅜	89½	— 3¾
..	..	95⅝	87	103½	94½	100	Cities Service, pfd.	1,900	....	98½	98	98½	....
..	..	8⅞	7⅜	9⅝	8⅞	10	Cities Service, pfd. B	600	9⅛	9¼	9	9¼	+ ⅛
3½	1¾	3⅞	1⅛	2¼	1 1/16	1	Colombia Syndicate	11,200	1⅛	1¾	1	1⅛	— ⅛
..	..	9¾	6⅜	8⅛	6½	10	Consolidated Royal	1,600	8¾	8¾	8	8¾	+ ⅜
16	10	14⅞	9½	19⅜	9½	N.P.	Creole Syndicate	2,100	11½	11½	10⅝	10¼	— 1⅜
..	..	3	.50	2¾	.76	N.P.	Crown Central	3,200	1⅝	1⅝	1½	1½	— ⅛
7⅞	6¾	12	4	31	8⅛	N.P.	Darby Petroleum	1,400	25⅛	25⅛	24⅜	24⅝	— ⅞
..	..	2½	74	2¼	1	N.P.	Derby Oil & Refining	8,800	....	4⅞	2⅛	4⅞	+ 2⅞
..	..	16¾	4	21	7½	N.P.	Derby Oil & Refining, pfd.	2,000	....	27	20⅞	27	....
..	..	2	.40	.53	.15	N.P.	Gilliland ctfs.	No sales.					
98	92	118	86¼	165	101⅛	$25	Gulf Oil Corp.	48,800	149⅜	167	144	163	+14½
$3.00	.83	2½	.80	2¾	1	5	International Pet.	3,300	2⅛	2½	2⅛	2¼	....
..	..	2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	13,200	2¾	3½	2⅜	3	+ ⅛
12¼	5¾	10⅞	5⅛	9⅜	5⅛	25	Leonard Oil & Dev.	2,900	....	5⅞	5¼	5½	+ ¼
27	20	27½	20	40½	20	N.P.	Lion Oil & Refining	2,100	....	33½	32⅜	33	....
46	30	59⅜	37	69⅛	49	$25	Lone Star Gas	No sales.					
2⅞	1	2⅞	.80	1⅞	.50	1	Magdalena Syndicate	5,500	60	67	60	65	+ 1
34	12½	52	12	45	32	N.P.	Margay Oil	3,600	....	4½	4	4	....
8	5½	12⅛	5	8	3	N.P.	Mexico-Ohio Oil	100	4	4	4	4	....
1¾	1⅛	1½	1	1½	.81	$1	Mountain & Gulf	14,200	....	1½	1⅜	1½	+ ⅛
26	23	29¼	22¾	28⅝	20¼	10	Mountain Producers	9,900	20⅝	21⅜	20	20	— ⅞
6⅝	5	5⅞	4⅝	5⅝	4¼	5	New Bradford	900	4⅞	5	4¾	5	....
..	..	16	9¼	11⅜	7⅛	1	New Mex. & Ariz.	800	7½	7½	7½	7½	....
..	..	12⅜	9½	13¼	10⅛	N.P.	North Central Texas	No sales.					
10⅛	5⅞	9⅜	3¼	6	2¼	N.P.	Pandem	600	....	2⅝	2⅜	2⅜	— ¼
12¼	11¾	12⅛	7	15⅝	8½	N.P.	Pantepec Oil	3,900	10	10⅛	10	10	....
22¾	12	13½	5⅛	7⅞	5⅛	N.P.	Pennok Oil	2,400	6¾	7¾	6¾	6¾	....
17	8½	24⅜	7	17⅜	9	25	Red Bank Oil	No sales.					
30¼	12	15½	3½	12⅞	4⅛	N.P.	Reiter-Foster	2,700	7⅞	7⅝	6⅞	6⅞	— ⅝
7	4½	7	4½	10⅜	4⅝	N.P.	Ryan Consolidated	900	....	9⅛	8⅝	8⅞	+ ⅛
10	7⅛	8	5¼	7¼	5¾	$10	Salt Creek Cons.	200	5¾	5¾	5¾	5¾	+ ⅜
35	24⅛	35½	27¼	35	23¼	10	Salt Creek Prod.	7,900	25¼	25½	25	25	+ 1
6⅞	1¼	7	1¼	3½	1	5	Savoy Oil	No sales.					
27	7⅝	26½	17	22⅞	13	10	Tidal Osage	100	14¾	14¾	14¾	14¾	....
25¾	7⅝	23¾	15	21¼	13⅛	10	Tidal Osage, nonvoting	400	13⅝	13⅝	13⅝	13⅝	+ ⅛
92	63½	92	63½	91⅞	75	100	Transcontinental, pfd.	100	87½	87½	87½	87½	— 1½
8	4½	7⅜	4¼	8¼	4⅞	5	Venezuelan Petrol	17,500	6⅜	6⅜	5⅜	5⅜	— ⅜
8⅛	5½	8	4¾	8¼	4⅞	$1	Woodley Petroleum	1,100	6½	6½	5¾	6⅞	+ ⅜
6½	6	6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	1,600	....	4¼	3⅝	4⅜	....

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Listed capital	Par value	Stocks—	Div. rate	Last paid	For week ended January 12 Sales	Open	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	43⅞	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	15,300	40⅜	40¾	38⅛	40	— ¾
74	39⅞	82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	4,600	60¼	62¼	58½	58½	— 3⅜
60	44⅜	50¼	35	53⅜	37½	$57,260,300	$25	Associated Oil	50cQ	Dec. 31, 28	3,000	....	45⅜	45	45⅜	— 1⅝
128¾	97	131¾	104	59½	50¾	50,000,000	25	Atlantic Refining	25cQ	Dec. 15, 28	153,200	63⅛	65⅜	62¼	62¼	— 1¾
33½	23½	35½	20¾	53	20	35,194,000	25	Barnsdall Corp.	50cQ	Feb. 5, 29	134,600	45¾	45⅞	42⅝	43⅝	— 1½
94¼	50	96¾	65	94⅞	68	20,785,400	100	General Asphalt	.....	.....	23,000	75½	81¼	74¼	80⅜	+ 4⅝
72	50¼	175¾	60½	167	79	25,000,000	100	Houston Oil	.....	.....	3,200	98	98	92⅞	95	— 5
34	19⅝	32¾	17⅝	37½	21¾	(sh) 959,457	N.P.	Independent Oil & Gas	50cQ	Jan. 31, 29	24,100	33¼	33⅞	32	32½	— ⅞
12¾	7½	12⅛	7⅝	39⅝	9	8,203,080	$10	Indian Refining	.....	May 31, 24	49,900	30½	34⅞	29	33¾	— 3¼
25⅞	16½	37¾	20½	39⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	.....	May 1, 27	1,600	32	32	30⅝	30⅝	— 1⅜
19⅞	12	18⅛	10	19¾	9⅜	(sh) 1,237,078	N.P.	Louisiana Oil Refining	.....	.....	117,700	17⅝	18	16⅝	17⅜	— 1
28	16½	22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	1,100	16½	16½	16⅛	16⅜	— ⅝
63⅜	49¼	58½	31	49⅜	33	(sh) 2,316,692	N.P.	Marland Oil Co.	50cQ	Mar. 31, 27	86,400	44½	46	43½	44	— 1
13⅜	6	9¼	3	73	4⅝	(sh) 945,939	N.P.	Mexican Seaboard	.....	Dec. 15, 20	219,400	63¾	65½	56½	59	— 6
37	20½	39⅝	25½	44½	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	50cQ	Feb. 15, 29	31,200	38⅛	38⅝	35⅛	35¼	— 3¼
104¼	90	105	97	120⅛	103¼	$6,718,000	$100	Mid-Continent Petroleum pfd.	$1.75Q	Sept. 1, 28	300	121	121	121	121	.....
2½	½	3¾	1⅝	7⅜	2⅜	24,298,850	10	Middle States	.....	July 1, 23	12,200	5	5	4⅝	4⅜	— ⅛
76½	56⅛	65⅞	40⅛	55½	38¼	$48,807,400	$50	Pan American P & T.	.....	Oct. 20, 27	2,300	49¾	47½	46¼	47	— 2½
78⅝	56⅞	66⅝	40¼	58⅞	37¾	121,097,900	50	Pan American P. & T. B	.....	Nov. 15, 24	34,900	48⅛	49⅞	47½	48½	— 1⅜
46	30	37⅞	16¾	28⅜	15½	(sh) 400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	500	17½	17½	17½	17½	.....
32	4½	18⅞	8	21⅜	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	1,800	13	13½	12⅞	13¼	— ⅛
99⅜	51	83	54	106¼	70	$2,935,200	$100	Panhandle P. & R. pfd.	.....	July 2, 23	300	75	75	75	75	— 5
57⅜	40	60¼	36¼	53⅞	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	Jan. 2, 29	26,400	45⅛	45⅛	43⅛	43⅛	— 2¼
....	....	1⅛	½	5¼	½	$29,622,925	$25	Pierce Oil Corp.	.....	.....	5,000	2⅝	2⅞	2⅝	2⅝	— ⅛
7	2¼	5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	17,800	5¼	5½	5⅛	5½	+ ¼
60¼	48	55½	45⅝	68	46	60,000,000	25	Prairie Oil & Gas Co.	.....	Aug. 31, 27	43,800	61⅛	61⅝	59¼	60½	— 1
20¾	11	33⅞	16¾	28⅞	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	2,100	23⅜	23½	22½	22⅜	— 1¼
41¾	30¾	50	36⅞	49⅝	41	2,845,350	50	Producers & Refiners pfd.	.....	May 1, 25	31,000	42	43	42	43	.....
31	25¼	33½	25	31¼	19	75,959,350	25	Pure Oil Co.	25cQ	Dec. 1, 28	22,200	27⅜	27⅜	26¼	26⅜	— ⅞
27½	22	28⅝	25⅜	56	23½	47,025,000	$25	Richfield Oil	.....	Nov. 15, 28	31,700	46½	47⅝	45¼	45¾	— 2
57⅜	47⅜	54½	44¼	63⅜	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	50cQ	Jan. 10, 29	2,200	55	55	54	54¼	— 1½
48⅝	40½	47⅞	41⅜	57½	40⅝	(sh)£30,000,000	£1	Shell Transport & T.	$1.455	July 23, 28	500	55¾	55¾	55¾	55¾	— ½
31	24	31¾	24⅝	39¼	23¼	(sh)20,000,000	N.P.	Shell Union Oil	35cQ	Dec. 31, 28	46,900	29⅛	29⅛	28	28⅛	— ⅞
28⅝	15⅛	26⅜	14¼	27¼	18⅛	$8,357,000	$10	Simms Petroleum	10cQ	Dec. 15, 28	15,600	22⅞	22⅞	21⅝	22	— 1¼
24⅞	16¾	22⅜	15	46¼	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	.....	457,700	41⅞	44	39¾	42	— ⅜
99½	90	104½	97	110	102½	$16,604,600	$100	Sinclair Consolidated pfd.	$2Q	Nov. 15, 28	1,300	109¾	110	109½	109½	— ¼
37⅛	26⅝	37⅜	24⅛	42⅝	25	27,396,590	25	Skelly Oil Co.	50cQ	Dec. 15, 28	10,500	35⅜	36¼	34⅛	35	— 1⅝
63⅝	51½	60¾	50⅜	80	53	(sh)12,594,098	N.P.	Standard Oil of California	65½cQ	Dec. 15, 28	47,000	71⅞	71⅞	69	69¼	— 3
46⅜	37½	41⅜	35⅛	59⅜	37¾	$611,120,700	$25	Standard Oil of New Jersey	*25cQ	Dec. 15, 28	97,400	53⅛	53¾	52⅛	52¼	— 1⅝
47¼	30⅜	34⅛	29¾	44¼	28¾	427,973,275	25	Standard Oil of New York	40cQ	Dec. 15, 28	268,100	42¾	44⅛	42	42⅝	— ⅝
41⅝	30⅛	34⅞	30	77	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	Dec. 15, 28	3,100	66	68½	64	66½	— 1
5¼	1	6½	3⅛	14¼	2½	(sh) 1,267,000	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	70,400	10¼	10¾	9⅞	10	— ⅜
58	48	58	45	74¾	50	$211,076,650	$25	The Texas Corporation	75cQ	Jan. 1, 29	47,100	66	66	64¼	64¾	— 2
19½	12	18⅞	12	26⅜	12½	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	29,600	18⅛	18⅜	16⅞	17⅛	— 1
39¼	27	29½	19	39	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Dec. 15, 28	5,700	36	36½	34⅞	36	— ½
103	87¼	90⅛	85	100⅛	86	$20,705,200	$100	Tide Water Oil Co. 5% pfd.	$1.25Q	Nov. 15, 28	2,700	96½	97	96	96	— 1
27	20⅞	19¼	15⅞	25	14⅜	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	25,200	21¼	21¼	20⅛	20¼	— ¾
5½	3	10⅜	3¾	14⅜	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	36,700	12	12	11¼	11½	— ¼
58⅜	37¼	56½	39⅝	58	42¾	$94,798,100	$25	Union Oil of California	50cQ	Nov. 10, 28	6,100	50⅞	51	48¾	48¾	— 2⅝
120⅝	84¼	127½	94	128⅛	116¾	31,061,200	100	Union Tank Car Co.	$1.25Q	Dec. 1, 28	No sales.					
30⅛	23½	34½	24½	44⅞	26	(sh) 356,000	N.P.	Warner Quinlan	50cQ	Jan. 2, 29	32,300	39¾	39¾	37⅝	38⅛	— 1⅞
29¾	25⅛	27½	20	38	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Jan. 20, 29	8,700	35½	35¾	34½	34⅜	— 1
								Wilcox Oil & Gas	.....	.....	4,000	19½	21½	19½	21½	+ ½

*Also extras.

STANDARD OIL STOCKS ON NEW YORK CURB

21	16	21⅝	17⅞	22⅜	16⅜	£4,126,460	£1	Anglo-American Oil	.....	June 6, 28	5,400	....	15⅞	14⅜	15⅜	+ ⅛
....	....	3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	900	2⅛	2⅛	2⅛	2⅛	— ⅜
76	65	69	50	56	45½	1,000,000	25	Borne Scrymser	$18.A.	Oct. 15, 28	100	42¾	42¾	42¾	42¾	.....
59½	42	60	45	76	53	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 28	700	67	69	67	69	+ 2
82½	65	126	76½	161	117¼	3,000,000	25	Chesebrough Mfg.	$1Q	Dec. 28, 28	400	141	142¼	140⅛	142¼	+ ¼
25⅞	17½	22⅝	16¼	23	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	22,000	19¾	19⅞	18¾	18¾	— 1
137	102	137	89	114	67	1,500,000	50	Cumberland Pipe Line	$1A	Dec. 15, 28	100	....	65½	65	65	.....
63⅜	43	68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	50	65½	65½	65½	65½	.....
32½	9⅞	13½	3½	12	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	6	6	6	6	.....
68¼	52	68½	54	114¼	60	73,117,577	25	Humble Oil & Refining	30cQ*	Jan. 1, 29	12,200	100	102⅞	97⅛	101⅛	+ 1
144½	125½	182	123¾	290½	176½	20,000,000	100	Illinois Pipe Line	10%S.A.	Dec. 15, 28	550	290	306½	290	306½	+15½
....	....	64¾	37¾	104	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	25cQ	Dec. 1, 28	12,200	98	102	97¼	98⅜	— ½
72½	58	94½	61	92¾	74⅞	$5,000,000	$50	Indiana Pipe Line	$1Q	Feb. 15, 29	100	89½	89½	89½	89½	+ 4½
35½	28¾	39	28¼	55	35	(sh) 7,123,444	N.P.	International Petroleum	25c	Nov. 30, 28	44,200	55¼	57¾	53⅝	56½	+ 1½
20¼	12½	24	13½	32⅜	20⅛	$6,363,350	12.50	National Transit Co.	25c	Dec. 15, 28	2,000	....	23½	23⅛	23½	+ ⅞
51½	27¼	44½	31¼	75	37½	5,000,000	100	New York Transit	.....	July 15, 26	7,000	72	72¼	72	72¼	+ 1¼
80½	64	100	70	125	62	2,000,000	50	Northern Pipe Line	$38.A.	Jan. 2, 29	2,000	....	63¼	62	62	.....
67⅞	55¾	67⅞	52	83½	58	60,000,000	25	Ohio Oil Co.	50cQ*	Dec. 15, 28	9,000	72⅜	72½	70⅞	72¼	— ¾
24⅜	15	39	12	44	29	10,000,000	25	Penn Mex. Fuel	$1.25	Dec. 15, 28	1,000	39	39	34⅞	35½	— 3½
137½	122½	190	132	278	172	101,000,000	25	Prairie Pipe Line	$3.50	Oct. 31, 28	3,250	272	272	264	270	— 1
220	84½	201½	175½	220	167	4,000,000	100	Solar Refining	$58.A.	Dec. 20, 28	150	214½	214½	200	200	—19½
74½	61½	27¼	15½	35⅞	12	1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	No sales.					
50	34½	41½	35	69	36¾	2,000,000	25	South Penn Oil	50cQ	Dec. 31, 28	5,400	69	69	66½	67⅛	— 2¼
56	47½	83	55½	100	70	3,500,000	100	Southwest Pa. Pipe Lines	$1Q	Oct. 1, 28	No sales.					
70½	60½	81½	64⅝	95⅞	70⅞	228,415,463	25	Standard Oil of Indiana	62½cQ	Dec. 15, 28	37,900	90⅜	90⅜	88½	87⅜	— 2⅝
36½	16½	20⅞	14⅝	27⅜	15	8,000,000	25	Standard Oil of Kansas	.....	June 16, 24	100	21	21	21	21	+ ¼
134⅜	108	130	111½	179¾	122¼	17,012,559	10	Standard Oil of Kentucky	$1Q	Dec. 31, 28	.....	....	43¾	42⅛	42⅞	.....
51⅞	42	49½	40	54⅝	39⅞	4,559,850	25	Standard Oil of Nebraska	63cQ	Dec. 20, 28	600	48¾	48¾	47½	47½	— 1¼
372	288	87½	72	134	71	14,000,000	25	Standard Oil of Ohio	62½cQ	Jan. 2, 29	850	117¼	117¼	116	117	— 2
21	15	21	14½	26	16	861,000	25	Swan Finch Co.	.....	Nov. 1, 19	150	17½	18	17½	18	.....
109⅜	90⅛	....	....	109¾	72¼	125,619,000	25	Vacuum Oil	75cQ	Dec. 20, 28	13,700	106¾	114¾	105½	113⅝	+ 6⅞

*Also extras.

and increasing number of shares to 160,000 from 40,000. Directors were re-elected. J. R. Cuthbert was elected general manager succeeding F. T. Cuthbert, who retains his office as president. P. M. Cory was elected general superintendent. Other officers were re-elected.

Skelly Oil

Skelly Oil Co. declared regular quarterly dividend of 50 cents, payable March 15 to stock of record February 15.

S. A. SLOAN DEAD

Samuel A. Sloan, of Midland, Tex., was killed at Colorado, Tex., when his airplane fell to earth. Mr. Sloan was engaged in the oil business in West Texas, and had formerly lived in Tulsa where he was well known as a lease broker until the United States entered the World War. Mr. Sloan was a member of the 239th Air Squadron during the war and when mustered out went to West Texas. He and S. S. Owen of Tulsa opened the Chalk Pool in Howard County, Texas, and later sold their holdings there to the Magnolia Petroleum Co.

MR. GUIBERSON IN RECITAL

Richard Guiberson, widely known among oil men as vice president of the Guiberson Corp., Los Angeles, Calif., which manufactures oil-field specialties, has gained a reputation also as a baritone singer, and he is to appear February 15 in a concert recital in the Los Angeles Philharmonic Auditorium under L. E. Behymer's management. Mr. Guiberson, according to music critics, has a voice of fine dramatic timbre.

PRICE SITUATION IS UNCHANGED AT CHICAGO

(Continued from Page 122)

is the result of an increased supply of these grades and an increased demand which is larger than can be supplied with present refining methods, for the lighter fuel oils. The demand has been lagging so far this month here and sellers say it takes a lot of effort to bring in business. Quite a number of the best accounts are under contracts, some running until June and the prices are low in most cases, very low considering the length of the term. The consumption of fuel oils is large and refiners report decreases in stocks which may result in some strengthening of prices for even the heaviest oils. Other grades are a little higher, some advances having been made in quotations by refiners during the week but the actual market prices show little change as there are ample supplies available particularly of the heavier fuels.

Lubricating Oils

The lubricating oil situation shows further strength in Pennsylvania and to some extent in all sections for bright stocks, steam refined stocks and for waxes. Supplies of all these are light and all are well sold ahead. Motor oils are not active but there is a steady replacement demand, the higher qualities being in best request compared with supplies.

Tank Wagon Situation

Very little change is to be noted in the tank wagon situation. There have been a few changes at minor points in the territory, largely as the result of local competition. No changes were made last week at any major point in the territory. As a whole consumption has been checked by colder weather. There has been much talk of evasions of the Q.D.A., and of the leases being made but careful investigations by some of the larger oil companies showed these to be false in every instance investigated and that the Q.D.A. is being lived up to. The old leases are being permitted to run in most cases, both the P.D.I. and the Triple A agreements, but the number of new agreements being made is much exaggerated and those made are made only after careful investigation. In a general way the situation over the territory shows up much better than a year ago both as to open and concealed price cuts or evasions. Many reports of wider margins and special terms are traceable to dealers who use these stories to secure concessions for themselves. Refiners are working together in these matters and such reports are in most cases made directly to the party named as the offender and the real facts are secured, with the result that dealers using such tactics find their stories reflecting on their own reputation.

PANHANDLE FIELDS

(Continued from Page 43)

oil and 25 bbls. water at 910-13 feet. Ohio Texas Oil Co.'s No. 9 Matthews made 528 bbls. at 1,126-32 feet. Its No. 10 Matthews made 1,210 bbls. at 1,128-49 feet. Roeser & Pendleton, Inc.'s No. 86-A-60 Cook made 30 bbls. of oil at 1,178-90 feet. Their No. 31-A-60 Cook made 50 bbls. of oil 1,335-44 feet. Their No. 32-A-60 Cook made 50 bbls. at 1,210-35 feet. Their No. 12-A-62 Cook made 75 bbls. of oil at 1,380-87 feet.

Palo Pinto County

Atlantic Oil Producing Co.'s No. 1 Stuart made 5,000,000 feet of gas at 1,847-75 feet.

Stephens County

Baldwin and others' No. 1 Jackson was dry and abandoned at 2,045 feet. Glenridge Oil Co.'s No. 1 Keathley made 5,000,000 feet of gas at 3,065-75 feet. Hanlon Gasoline Co.'s No. 4 Houston was temporarily abandoned at 3,990 feet. McArthur & Maxwell's No. 1 Ledbetter was dry and abandoned at 1,704 feet.

WICHITA COMPLETIONS
Week Ended January 12

Archer County

C. E. Beavers' No. 1 Turbeville was dry and abandoned at 1,580 feet. J. H. Howell and others' No. 1 Taylor was dry and abandoned at 1,665½ feet. F. P. Rose and others' No. 1 Wilson was dry and abandoned at 1,752 feet. W. C. Young and others' No. 1 Langford-A was dry and abandoned at 1,451 feet. L. E. Burns' No. 1 Porter was dry and abandoned at 1,450 feet. F. C. Grebin's No. 1 Hennig was dry and abandoned at 1,447 feet. Tidal Oil Co.'s No. 1 Waggoner estate was dry and abandoned at 1,548 feet.

Baylor County

Heinzerling and others' No. 1 Blackman was temporarily abandoned at 40 feet.

Cooke County

Pure Oil Co.'s No. 3 Embry made 43 bbls. at 1,321-87 feet and 1,497-1,510 feet. Staniforth & Skelly Oil Co.'s No. 1 Ware was dry and abandoned at 2,004 feet. O. Lydecer's No. 1 McCoy, location was abandoned.

Haskell County

Martin & Stewart's No. 1 Thompkins was dry and abandoned at 2,930 feet. Superior Oil Corp.'s No. 2 Reynolds had an oil show at 1,740-51 feet and flowed 65 bbls., little water, at 1,751-52 feet.

Young County

Dorian and others' No. 3 Johnson made 8 bbls. at 533-40 feet. Gwynn's No. 3 Kunkel was dry and abandoned at 1,172 feet. Holbrook & Woods' No. 3 Watson made 12 bbls. at 557-69 feet. Panhandle Refining Co.'s No. 11 Prideaux-C made 3 bbls. at 600-11 feet and was drilled to a total depth of 653 feet. Prairie Oil & Gas Co.'s No. 5 Kunkel made 75 bbls. at 1,135-44 feet. Richards and others' No. 3 Campbell made 15 bbls. at 892-95 feet. Stafford's No. 1 Petty and Miller was dry and abandoned at 650 feet. White's No. 2 fee was dry and abandoned at 730 feet. Wooten & Reed's No. 1 Eichelberger was dry and abandoned at 901 feet. Stovall's No. 11 fee made 95 bbls. at 4,357 feet.

Wilbarger County

American Refining Properties and others' No. 1 Waggoner was dry and abandoned at 2,503 feet. Archer Drilling Co.'s No. 1 Waggoner was dry and abandoned at 1,326 feet. Baker and others' No. 1 Waggoner-D was dry and abandoned at 1,896 feet. Barkley & Meadows' No. 8 Waggoner-C made 25 bbls. at 1,875-92 feet.

Cosden & Co.'s No. 31 Waggoner-B made 80 bbls. at 2,303-25 feet. Their No. 32 Waggoner-B made 50 bbls. at 2,354-68 feet. Easter Oil Co.'s No. 1 Waggoner-B made 100 bbls. oil and 75 bbls. water at 1,913-21 feet. Fain-McGaha Oil Corp.'s No. 26 Waggoner-S made 50 bbls. of oil at 2,319-32 feet and 2,414-45 feet. McKanna Agent's No. 4 Waggoner-B flowed 327 bbls. at 1,838-48 feet and 1,848-64 feet. O'Neil's No. 1 Rainwater was dry and abandoned at 3,201½ feet. Prairie Oil & Gas Co.'s No. 10 Waggoner-A made 12 bbls. at 2,405-16 feet. Waggoner Refining Co.'s No. 12 Waggoner-E made 35 bbls. at 2,316-21 feet. Waggoner Refining Co.'s No. 14 Waggoner-H made 165 bbls. 2,327-37 feet. Waggoner Refining Co.'s No. 6 Waggoner-I made 100 bbls. at 2,268-70 feet. Its No. 7 Waggoner-I made 250 bbls. at 2,395-2,408 feet.

Wichita County

Coleman & Coppock's No. 19 Kemp & Kempner made 350 bbls. at 1,469-89 feet. Humble Oil & Refining Co.'s No. 5 W. H. Taylor made 350 bbls. at 1,465-87½ feet. Its No. 6 Taylor made 20 bbls. hourly at 1,472-86 feet. Mrs. R. A. Laning's No. 3 McCarty made 60 bbls. at 1,478-89 feet.

CURVE FOR MEASURING GAS WELL VOLUMES

(Continued from Page 34)

then have a representative present to take an open flow reading witnessed by the operator or his representative. This reading may be witnessed by any other parties interested.

To take this initial reading the representative of the pipe line company is to have on hand at 50-inch water or mercury column and a 100-pound spring pressure gauge. The well is to be gauged with water or mercury in the 50-inch column and only wells that cannot be so gauged are to be gauged by the spring gauge. The 50-inch mercury column can read volumes through an 8¼-inch opening up to 55,000,000 feet.

The well is shut in and allowed to build up to maximum pressure and the initial shut-in pressure taken. Since some wells are slow in building up to maximum pressure this reading may be taken at any proper time before delivery is started.

Up to this point the operation of the plan is basically the same as the old procedure. The only difference is that the use of the spring gauge is limited and the initial reading is witnessed, both of which should increase in accuracy.

Month-to-Month Volume Readings

To obtain month-to-month volume readings the plan proceeds as follows:

Shut-in pressure readings are taken of each well once a month. Subnormal shut-in pressure indicates water or other conditions. A well with such a pressure is listed for investigation.

If the pressure of a well is normal the percentage of pressure decline is determined from the initial and the present shut-in pressure readings.

By referring to the "pressure-volume decline curve" the equivalent percentage of volume decline is found.

This percentage of volume decline is subtracted from the official initial volume which gives the present volume.

That is all there is to the operation of the plan.

It is as simple as the old procedure; it is easier and decidedly less costly to maintain.

Is capable of being understood by field men and by operators in the Chickasha Field who do not have a technical staff.

Is practical, uniform and equitable.

It does not require any change or addition to the present equipment on the well, therefore costs nothing to install.

It converts into ultimate income gas formerly blown into the air.

And being a pressure method it holds back pressure on the sand which prevents caving and premature drowning of wells close to edge water.

The only part of the plan that would arouse comment or question as to any possibilities of general applicability is the "pressure-volume decline curve."

"Pressure-Volume Decline Curve"

This curve was based on the actual percentage of pressure and volume declines of 20 normal wells in the Nichlos sand. Actual curves were made for each of these wells. The 20 curves were separated into four groups of five each and an average curve made for each group. These four average curves were platted together and there was less than 1 per cent average variance between them which showed that a sufficient number of wells were used. The final curve was made from those group curves.

Realizing that a curve based on data from one sand might not apply to other sands the curve was checked with 31 wells producing from two other sands. These wells had pressures ranging from 630 pounds to 115 pounds and volumes from 21,000,000 to 900,000. The total volume of these wells actually read by open flow at the time of the checkup was 326,000,000 whereas the total volume determined by the "pressure-volume decline curve" was 322,000,000, a difference of only 4,000,000, or 1¼ per cent. The delivery for that month was 1 per cent so the final variance in the two methods, from an operator's standpoint, was negligible. Even if the delivery were the maximum 25 per cent allowed by law the final variance would still be negligible.

Fundamentally the margin of error is very small in this curve but the curve should be subjected to many checkups in the Chickasha Field. The simplicity of the curve is such that a checkup can be made at any time for the satisfaction and understanding of the operator, and a simple basis for comparison is available.

General Possibilities of Curve

It would appear at this point that so far as any possibilities of general applicability is concerned any gas field other than Chickasha would have to have a mass of past data to establish a curve.

This might be true but there is an angle from which to look at this curve that might interest gas technicians and operators in general.

If we look at the Chickasha Field merely as a basis for making the curve and then analyze the fundamentals of the curve itself we find a practical curve that corrects for deviation from Boyle's law, of gas volumes under high pressures and velocity. It would be called a deviation curve.

Boyle's law has done much to simplify understanding of problems of gas volume. A true Boyle's law curve showing percentage of pressure and volume declines would be a straight line. Even if such a straight line curve were used in a dry gas field, including a field without a mass of past data, and with no extremely special problem present, the results of its usage by all operators in the field would be uniform and equitable for all practical purposes.

Assuming such an application to be true then there is greater accuracy and equitability possible from a decline curve that corrects for the factors in gas well volume readings that cause deviation from Boyle's law.

Looking at the "pressure-volume decline curve" from this angle indicates that it is fundamentally sound and that it has other possibilities than the Chickasha Field.

As a deviation curve it would be useful not only in determining the month-to-month volumes of gas wells but also in the estimation of deliverable gas reserves.

PRODUCTION CONTROL TO BE A.I.M.E. TOPIC

Production control will be an important topic at the February meeting of the American Institute of Mining and Metallurgical Engineers in New York. O. E. Kiessling, secretary of the Committee on Production Control, writing in Mining and Metallurgy, says:

As a final topic for presentation on the formal program, it seemed desirable to read into the discussion some record of conscious production control, co-operatively arrived at between producers, in an American industry. Of the industries which might be profitably taken up, the oil industry seemed to deserve first attention, because it is really a pioneer in the attempt to solve a very difficult problem of overproduction and because of the progress it has made in controlling production in the Seminole and other fields. The committee has been fortunate to secure Ray M. Collins, umpire for the Greater Seminole area, to discuss the question of controlling oil production. As umpire in an extensive scheme for working out a practical application of the principles of production control as applied to oil, Mr. Collins has met a great many difficulties and acquired a large body of experience which should be of wide interest. While the discussion of this topic involves some specific details not familiar to all members of the Institute, throughout the practical problem of co-ordinating oil production run certain human and economic elements—and these will be found in any problem of like nature, whether concerned with oil, coal, steel, or any one of numerous industries.

The committee hopes that the four topics listed for presentation: Long-range planning as a means for preventing over stimulated capacity, the legal aspects of co-ordinating output, cycles in metal production, and controlling the production of oil, will serve as starting points for extensive discussion.

INTEREST FOR INDIANS

Secretary Roy O. West of the Department of the Interior recommends the passage of a bill, initiated by the Bureau of Indian Affairs, which provides that the treasury department shall pay 4 per cent interest on Indian tribal funds, aggregating about $6,500,000 on which no interest is now paid. Among the items affected are $900,000 returned from oil and gas belonging to the Kiowa, Comanche, and Apache Indians of Oklahoma; and $400,000 belonging to the Choctaw Indians of Oklahoma.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CRACKING HEAVY OILS

The Rumanian crude oil yields 7 to 9 per cent gas oil by topping. By redistilling the fuel oil, 50 per cent of the crude, in pipe stills, it would be possible to obtain a supplementary yield of gas oil. As gas oil is worth four times more than fuel oil, this operation should be profitable. What kind of fuel oils are suitable and has this gas oil the same characteristics as the straightrun gas oil? —A. G.

The operation which you suggest is being practiced to a considerable extent with various kinds of heavy oils for the charging stock. Distillates obtained from topped crudes range from 26 A.P.I.-0.898 specific gravity to 36 A.P.I.-0.845 specific gravity. The chemical and physical properties cannot be compared with the ordinary straightrun gas oil from the common run of crude oils; however, this kind of oil is suitable for cracking for the production of gasoline. As obtained from many crudes, it yields a motor fuel which is superior to the gasoline obtained by topping, because it usually has a much higher antiknock rating.

The ultimate yield of gasoline, without considering the primary separation, depends to a great degree on what special kind of cracking unit is used and how it is operated. You know that there are cracking stills which yield only 20 per cent gasoline, while others show yields as high as 60 per cent from the same general kind of charging oil.

In a similar way of reasoning, it is clear that the type of gas oil obtained from the heavy oil will vary with the kind of pipe still and its operation. The degree to which the oil is reduced is of course important. When operating the pipe still with an oil of about 20 A.P.I. gravity-0.934 specific gravity, the pipe still should take off 50 per cent of overhead which will have a gravity around 26 A.P.I. or 0.898 specific gravity. The Mid-Continent oils of this character have a 50 per cent boiling point below 650 degrees Fahrenheit (342 degrees Centigrade).

The yields of gasoline from a given crude oil are being materially increased by improved still conditions. These include combinations of shell stills, tube stills, cracking stills and towers. It is not unreasonable to expect an ultimate yield of 80 per cent gasoline from the average crude when market conditions warrant.

BASE TEMPERATURE AND BASE PRESSURE FOR GAS MEASUREMENTS

When the words base temperature and base pressure are used in connection with measuring gas volumes, does this mean standard conditions or can they be changed to suit local conditions?—C. G. A.

The standard conditions for determining gas volumes are quite generally accepted to mean a pressure of 760 mm. and zero degrees Centigrade. However, it is not the practice to correct ordinary measurements of gas to this basis. Gas, both natural and artificial, is measured by the distributing companies in the United States in terms of cubic feet, on a basis of pressure, which is expressed in pounds and ounces, and the temperature is stated in Fahrenheit degrees.

A standard was offered by F. H. Oliphant of the United States Geological Survey, but has not been accepted by the industry. The Oliphant proposed standard was "The standard cubic foot of gas is the quantity which occupies a volume of 1 cubic foot at a pressure of 14.65 pounds absolute at a temperature of 60 degrees Fahrenheit." The normal pressure of the atmosphere in the gas fields is 14.4 pounds and gas is widely delivered under a pressure of 4 ounces, or 0.25 pound.

The terms base temperature and base pressure are usually those that are agreed upon by the interested parties and unless clearly defined are not definite. It is advisable to set the temperature conditions at 60 degrees Fahrenheit, and the pressure in ounces or pounds absolute. The atmospheric pressure varies from day to day and in different localities so that when the base pressure is stated in terms of absolute pressure, there can be no misunderstanding of what is meant. The base temperatures and pressures are commonly arranged to suit the local conditions.

LIME FOR REDUCING CORROSION

I will greatly appreciate it if you will give some information on the use of lime in connection with sweetening oils and preventing corrosion. I would like to get some information as to how much lime is used. I, of course, realize that the more corrosive the oil the greater the amount of lime necessary, but how much of this lime is ordinarily used and what is the usual method of injecting the lime in the oil? Is it mixed in a separate container and then pumped through the pipe still? —S. O. R.

Milk of lime or lime water is used to some extent for the treatment of gas and the lighter products from petroleum. The nature of the sulphur compounds and the quantity is important. When there are large quantities of hydrogen sulphide present and lime is available at a low price, the lime water treatment may be used to advantage. Its use is largely confined to the preliminary wash before the regular doctor treatment.

The introduction of lime in the form of a suspension into oil during the distillation process does not prevent corrosion but materially reduces it. With the use of relatively small quantities of lime the damage to equipment has in many instances been reduced fully one-half; so if the life of the parts may be doubled, it is well worth while.

Hydrated lime is the form commonly used and should be of the best grade obtainable. The quantity of hydrated lime usually added to the oil varies, but is seldom over one-half pound to the barrel. The lime is suspended, by means of mechanical agitation, in a part of the charging stock in a separate container, and portions of this forced into the main charge by direct action pumps. The delivery of the lime mixture should be made after the oil has passed through the charging pump.

There are three ways in which lime is used. Introduction into the cold oil and passed through the preliminary heating stage; that is, through the exchanger and heating tower. This system may be used in connection with a battery of shell stills and where several settling stills are a part of the battery. Another method is to permith the lime to get through the entire unit, and this is being practiced in some pipe still installations. In one well-known cracking process the lime is introduced as a part of the charge into the dephlegmating tower and flows from it to the still. This still has a motor which causes the oil to circulate at a very rapid rate.

S.A.E. SPECIFICATIONS

Please send us a complete set of S.A.E. specifications.—C. R. W.

The S.A.E. numbers were printed on this page February 2, 1928, and are produced again because of your inquiry and a similar request from several others.

The only specifications recommended by the Society of Automotive Engineers are those pertaining to viscosity and these provide for the classification of all crankcase lubricating oils by viscosity numbers ranging from 10 to 60. The viscosity numbers are based on Saybolt viscosities as determined at 130 and 210 degrees Fahrenheit as shown in the following table:

Crankcase Lubricating Oil Viscosity Numbers S.A.E. Recommended Practice

	Viscosity range — Saybolt Universal, seconds	
Visc. No.	At 130°F.	At 210°F.
10	90-115	.....
20	120-150	.....
30	185-220	.....
40	255-	70
50	.....	75- 95
60	.....	105-120

Oils with viscosities falling between the ranges specified shall be classified in the next lower grades.

From the report of the miscellaneous division, adopted by the society, June, 1911. Revised by the lubricants division, March, 1923, and July, 1926.

REFINING CRANKCASE OIL

Where may I purchase equipment for refining used crankcase oil? What would be the cost of equipment to handle 100 to 200 gallons a day? What would be required to make this used oil as good as new?—H. C. P.

The desired addresses and estimate of cost are forwarded by mail.

There are several factors involved when it comes to making this kind of oil as good as new. All crankcase oil contains some gasoline and other products that are lighter than lubricating oil, so that a complete separation is not possible except by heating and distilling. Frequently acid is found in the drained oil as a result of the combination of sulphur compounds and moisture. This cannot be removed except by neutralization. This neutralization may be accomplished in some cases by simply filtering through a suitable earth, and in others it is necessary to introduce an alkaline substance.

Viscosity is the most important property of a lubricating oil and this cannot be restored to an oil which has been used except by subjecting it to treatment similar to that employed by the refiner. The necessary step is the removal of the more volatile portions, which tend to reduce viscosity, and the usual method for doing this is to place the oil in the still where it is heated in the presence of steam until the desired viscosity is obtained.

COMPOSITION AND TESTS OF FUEL OIL DISTILLATE

Will you kindly furnish, if possible, the chemical composition and the tests which indicate the physical nature of what is known as fuel oil for domestic heating? —T. D. W.

The analysis given below was made by the Engineering Experiment Station, United States Naval Academy, as reported by Arthur H. Senner in the article, "Burners Tested for Domestic Heating," The Oil and Gas Journal, January 14, 1926, page 80.

A.P.I. gravity	34.2
Specific gravity	0.8542
Flash point (closed cup)	192°F.
Flash point (Cleveland open cup)	200
Fire point (Cleveland open cup)	210
Viscosity, Saybolt Universal at 70°F.	48
Viscosity, Saybolt Universal at 100°F.	44
Viscosity, Saybolt Universal at 120°F.	40
Per cent of water	None
Color of oil	Black
Gross B.t.u. per pound	19,235.5
Proximate analysis—	Per ct.
Volatile matter	99.988
Fixed carbon	9.012
Ash	None
Ultimate analysis—	Per ct.
Carbon	84.27
Hydrogen	12.85
Sulphur	0.36
Oxygen and nitrogen	2.52

SOURCE OF HELIUM

Is helium present in the natural gas found in countries other than the United States? What is the source of the present supply used by the Navy?—M. W. B.

We have no knowledge of any commercial supplies of helium outside of the United States. Some of the foreign fields produce natural gas that contains a trace of helium. The gas in the Polish fields, for example, is reported to contain small quantities of helium, not to exceed 0.05 per cent.

The Petrolia Field in Northern Texas, which has been the principal source of supply, is now in the last stages of its life after producing gas for more than 20 years.

The maintenance of these vital helium supplies is one of the jobs which have been put up to the United States Bureau of Mines. For years the chemists of that bureau have been analyzing samples of natural gas obtained from many gas fields located throughout the country, always in quest of the characteristic bright yellow line which, viewed through the spectroscope, announces the presence of the prized helium. This analytical work has resulted in accumulating valuable data regarding our helium resources, and the answer to the question as to where Uncle Sam is to obtain his helium, for some time to come at least, has been found, it is considered, in the Cliffside natural gas structure lying to the northwest of the city of Amarillo, in the Panhandle district of Texas. A big helium production plant, embodying in its helium separation cycle the results of thorough research on the part of the Bureau of Mines specialists, is located near the town of Soncy, about 6 miles west of Amarillo, and from the natural gas of the Cliffside structure, which has been found to have a helium content of about 1.75 per cent by volume.

Before the United States entered the World War, helium had been obtained only in small amounts as a curiosity in scientific laboratories. The total quantity recovered probably did not exceed 100 cubic feet and the cost of production was about $2,000 per cubic foot. As the result of the investigative work of the Bureau of Mines, in co-operation with the Army, the Navy and others, the cost of production of helium has now been brought down to but a few cents per cubic foot.

HANDLING THE FLOWING WELL IN MID-CONTINENT

(Continued from Page 36)

Assuming the following values the formula can be written:

$G = 0.8$ $T_o = (60° + 460°) = 520°$ Abs.
$T = (80° + 460°) = 540°$. $P_o = 15$.

$$P_1 = \sqrt{P_2^2 + L\left(\frac{Q}{52531 \cdot D2.66}\right)^2}$$

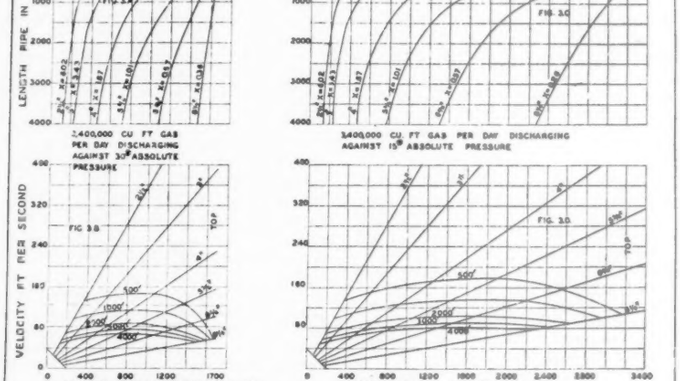
$$P_1 = (P_2^2 + L X^2)^{1/2} \text{ where } X = \frac{Q}{52531 \cdot D2.66}$$

Note: The computations in this paper are of slide rule accuracy only.

A study of this formula discloses that the inlet pressure (P_1) is contingent on the discharge pressure (P_2) and the amount of pressure required to force a given quantity (Q) of gas through a certain size (D) and length (L) of pipe. If the discharge pressure (P_2) is assumed to remain constant and a variable X is substituted for the quantity $\frac{Q}{52531 \cdot D2.66}$ then the only other variable factor in the formula is the length (L) of pipe. The value of X represents a ratio contingent on the two variable factors, quantity (Q) of gas and size (D) of pipe. The substitution of P_2, L and X in the formula gives results for the inlet pressure (P_1) without establishing definite values for the quantity (Q) of gas and size (D) of pipe but a definite ratio dependent on the two factors is established. So, in a specific problem if the quantity (Q) of gas is known, the size (D) of pipe is also fixed and vice versa.

Effect of Variables

It is rather difficult to understand just how much effect each of the variables (P_2, L and ratio X) has on the inlet pressure (P_1) unless actual values are substituted for the variable factors and the results are graphically illustrated as in Figures 1A and 1C.


VOLUME GAS M CU FT PER DAY
LENGTH PIPE IN FT.
VELOCITY FT PER SECOND
FIG. 3A
FIG. 3C
FIG. 3B
FIG. 3D
2,400,000 CU FT GAS PER DAY DISCHARGING AGAINST 30# ABSOLUTE PRESSURE
3,400,000 CU FT GAS PER DAY DISCHARGING AGAINST 15# ABSOLUTE PRESSURE

By substituting values ranging from 0.2 to 1.6 for the quantity X, with various values for L, and assuming an absolute pressure of 15 pounds per square inch for P_2, different values for P_1 are obtained as shown in Fig 1A. The data shown in figure 1C were obtained by using the same values for X and L but assuming P_2 as 30 pounds per square inch absolute. Field observations on both natural flowing and gas lift wells indicate that the ratio between the quantity (Q) of gas required to flow the well and the size (D) of flow pipe is quite important and that this ratio has maximum and minimum limits if the compressed gas is to do the work of lifting the oil to the surface. The ratios for X ranging from 1.6 to 0.2 probably include these maximum and minimum limits if the well is flowing against approximately atmospheric pressure. In practice the correct ratio is obtained in a natural flowing well by running a certain size (D) of flow pipe to suit the quantity (Q) of gas or in a gas lift well by injecting a sufficient quantity (Q) of gas to suit the size (D) of flow pipe that has been run.

Boyle's law provides the following equation for a perfect gas expanding under conditions of constant temperature. The assumption is made, for the problem under discussion, that natural gas while expanding obeys Boyle's law.

$P_2\ Q_2 = P_1\ Q_1$ = Constant.
P_2 and Q_2 = Terminal pressure and volume of gas.
P_1 and Q_1 = Any other pressure and volume of gas.

By substituting 15 as the terminal pressure for P_2 and 100 per cent as the terminal volume for Q_2 and the absolute pressures for P_1 corresponding to the proper values of L and X as shown in Figure 1A, different percentages of Q are obtained as shown in Figure 1B. The data shown in Figure 1D were obtained by substituting 15 as the initial pressure for P and 100 per cent as the initial volume for Q but using the absolute pressures for P_1 corresponding to the proper values of L and X as shown in Figure 1C to arrive at different percentages of Q as shown in Figure 1D. In other words, 15 pounds per square inch of back pressure (gauge) exists at the terminal end of the pipe.

Pressure and Volume Changes

The graphical illustrations of Figure 1 are helpful in analyzing the changes of pressure and volume due to the expansion of compressed gas through pipe lines. As shown in Figures 1A and 1C, back pressure applied at the discharge end of a pipe line has a more pronounced effect on the inlet pressure for the smaller values of X. The proportionate changes in volume on account of this condition are emphasized in Figures 1B and 1D. The conclusion to be drawn, when considering the energy of compressed gas as the means of lifting oil through that part of the flow pipe where "velocity lift" predominates, is that the quantity $X = \frac{Q}{52531 \cdot D2.66}$ must increase as the applied back pressure increases if the same amount of energy is required to lift the oil to the point where back pressure is applied. In other words, there is a limit to the amount of back pressure that should be applied to a certain diameter of flow string. When additional back pressure is desired, a flow pipe of smaller diameter should be used if "velocity lift" is to be maintained. In practice we find this condition illustrated in a well that will not flow through 6⅝-inch casing but will flow through 5 3/16-inch casing. The well will flow against atmospheric pressure through the smaller size of flow pipe but not through the larger size.

Figures 2A and 2C correspond to Figures 1D and 1B, respectively, except that Q is taken at 1,000,000 feet of gas per day instead of on a percentage basis. By fixing a value for Q and using the inside diameters of commercial sizes of pipe for D, most of the curves representing the values of X are eliminated and the problem of choosing maximum and minimum values of X is much simpler.

Figures 2B and 2D apparently do offer some evidence as to maximum and minimum values of X by illustrating the velocity of the gas through different sizes of flow pipes. These curves were obtained by the use of the basic formula, quantity = area times velocity (Q=Av).

The velocities indicated in Figures 2B and 2D are fixed by the values of Q and diameters of pipes as given in Figures 2A and 2C, respectively. The curved lines marked 500 feet—1,000 feet—2,000 feet, etc., show the velocities of the expanding gas at the corresponding depth in the hole according to the diameter of the pipe. The velocities at the top of the hole are shown by a vertical line.

Velocities for Depths

The velocities for depths below 1,000 feet in Figure 2D would be progressively lower depending upon the depth if the pipe carried oil and gas instead of gas only. But with the volume of gas near the top of the well something like 200 to 500 times the volume of oil, it is apparent that the velocities above 1,000 feet should approach those for gas only. Figure 2D should help to indicate a maximum value of X. For, it will be noted in Figure 2D and also in Table 3 that the velocity at a depth of 500 feet is higher through 3-inch pipe than through any other size. This is also true at a depth of 1,000 feet. The velocities corresponding to these depths are lower through 2-inch and 2½-inch pipe but the increase in velocity from 500 feet to the top is much greater than through 3-inch. Figure 2C shows that the value of X for 3-inch is 1.01.

The graphs in Figure 3 are similar to those in Figure 2 except that 3,400,000 feet of gas per day are used for the value Q. In this case the maximum velocity at depths of 500 feet and 1,000 feet is obtained through 5 3/16-inch casing. As shown in Figure 3C the value of X in a 5 3/16-inch flow string is also 1.01. Likewise, similar graphs for other volumes of gas would show a maximum velocity, compared with a minimum velocity at the top, for depths of 500 feet and 1,000 feet for the size of pipe where X = 1.

Table 2 gives the volumes of gas in cubic feet per day discharged at 15 pounds per square inch absolute with the corresponding sizes of commercial pipe to fit the equation $X = \frac{Q}{52531 \cdot D2.66} = 1$.

TABLE 2

Diameter Pipe Inches	Weight Pipe Lbs. per Ft.	Volume of Gas M. Cu. Ft. per Day 15-lb per Sq. In. Abs.
2	4.6	330
2½	6.4	564
3	8.5	992
4	12.6	2,040
5 3/16	20.	3,367
6⅝	24.	5,957
8¼	32.	12,917

The graphical illustrations in Figure 4 show the velocities at different depths down the hole of the volumes of gas for the sizes of pipe as shown in Table 2. As an example, 3,367,000 feet of gas per day under an absolute pressure of 15 pounds per square inch has a velocity through 5 3/16-inch casing of 313 feet per second. At 500 feet down the hole this gas is under an absolute pressure of 26.9 pounds per square inch, its compressed volume is 1,880,000 feet per day and the velocity through 5 3/16-inch casing is 175 feet per second at this point. At a depth of 1,000 feet, the absolute pressure is 35 pounds per square inch, the compressed volume is 1,445,000 feet per day and the velocity is 134 feet per second.

It will be noted that the pressure at a designated depth is the same for all sizes of pipe. Therefore, the pressure drop is the same for all sizes of pipe where $X = \frac{Q}{52531 \cdot D2.66} = 1$, but the volume and velocity of the gas increases with the size of the pipe.

The maximum volume of gas that should be expanded to 15 pounds per square inch absolute through a given size of pipe to obtain a maximum velocity of the gas at depths of 500 and 1,000 feet compared with a minimum velocity at the top of the well is given in Table 2. If this amount of gas is expanded through smaller sizes of pipe the velocity at depths of 500 and 1,000 feet will decrease because the absolute pressure due to frictional losses must increase at the designated depths. As an illustration, Table 3 has been prepared to show the velocity and pressure at different depths accompanying the expansion of 1,000,000 feet of gas per day through 2-inch, 2½-inch and 3-inch tubing.

TABLE 3

Diameter of Pipe Inches	Volume Gas 1,000 Cu. Ft per Day			Velocity Gas Ft. per Sec.			Absolute Pressure Lbs. per Sq. In.		
	Top	500 Ft	1,000 Ft.	Top	500 Ft	1,000 Ft.	Top	500 Ft.	1,000 Ft.
2	1,000	216	155	533	115	83	15	70	97
2½	1,000	354	258	356	126	92	15	42	58
3	1,000	554	421	233	129	98	15	27	36

Turbulence and Critical Velocity

A study of the data in Table 3 discloses some information that may be of value in attempting to fix a critical velocity for oil and gas mixtures in a flow pipe. The pressure drop for 1,000,000 feet of gas per day passing through 1,000 feet of 2-inch pipe is 82 pounds per square inch; through a 2½-inch flow string it is 43 pounds per square inch, and through a 3-inch it is 21 pounds per square inch. As the pressure at the end of the pipe is 15 pounds per square inch absolute in each case and the discharged volume of gas is constant, it seems logical to assume that a greater degree of turbulence must be the major factor to be considered in accounting for the additional loss of energy through the smaller sizes of pipe.

If the conclusion is correct that excessive turbulence does not exist under these conditions, it seems obvious in the case of oil and gas mixtures, that the drops of oil tending to follow an eddying or swirling motion would sooner or later come into contact with the metal surface of the pipe where they would tend to adhere. The result would probably be a cylindrical oil film formed on the inner surface of the pipe, as "velocity lift" predominates in the upper section of a flow string, it seems logical to assume that the gas by-passes the oil and proceeds through a lubricated cylinder.

Velocity furnishes an indication of the degree of turbulence. The term critical velocity as used in this paper refers to the velocity at which turbulence interferes with the "velocity lift" of drops of oil and should not be confused with the term critical velocity as ordinarily used where "viscous flow" supercedes "turbulent flow." The writer has had occasion to check in the field, within practical limits, the volume of gas as shown in Table 2 as the maximum amount of gas which should be expanded through the given size of flow pipe against atmospheric pressure on the trap if the maximum rate of oil production is maintained. The check has only been approximate due to varying physical and chemical characteristics of both the oil and gas from different wells. Gas measurements in most cases have been corrected for assumed values of specific gravity and temperature, and in some cases made with a Pitot tube instead of orifice meters. Pressure gauges on traps have not been checked. The wells varied in depth from 2,500 to 4,500 feet. Rock pressures have been relatively low and gas-oil ratios have ranged from 1,000 to 3,000 feet per barrel.

An approximation of the maximum volume of gas which should be produced through a given size of flow pipe to lift the oil is of considerable value in handling flowing wells. The gas measurement of a well limits the selection of the proposed flow string to two sizes. One size will be above the critical range and the other below.

Back Pressure and Critical Velocity

The critical velocity in the upper part of the flow string can also be controlled by applying back pressure at the discharge end of the pipe. As commercial sizes of tubing and casing limit the value of X for a given gas measurement (Q), the problem is to select a flow string which fits the conditions for the particular well and its estimated performance. If the critical velocity is exceeded, a

small amount of pressure on the trap will reduce the expansion of the gas and thus decrease the velocity in the flow string without materially affecting the back pressure aginst the oil sand.

The back pressure on a trap can be increased to increase the inlet pressure on the flow string and thereby the back pressure on the oil sand. In this case it is minimum velocity that should be guarded against, because there is a limit to the amount of back pressure that should be applied to the discharge end of a given size of flow string with a certain volume of gas because the pressure at the bottom of the well is fixed. Excessive back pressure reduces the velocity of the expanding gas to the extent that the gas-lift efficiency is impaired.

The writer has included in Figures 1, 2 and 3 a set of graphs illustrating the effects of 15 pounds per square inch of back pressure (gauge) applied at the end of a pipe line discharging gas. Their values for oil and gas mixtures is problematical. The density of the high pressure gas is nearer that of the oil than of gas at low pressure and undoubtedly this physical characteristic has an effect upon the gas as a lifting medium. The graphs do indicate, when compared to the corresponding ones for atmospheric discharge, that a comparatively small amount of back pressure has a decided effect upon the volume and velocity characteristics of the expanding gas, especially near the discharge end of the pipe.

Location of the Gas Trap

The location of the gas trap has a decided effect upon the length of time a natural flowing well will flow its production. Each well to be flowed should have a separate gas trap, for the cost of installation and depreciation is negligible compared to the benefits to be derived.

The function of compressed gas as a lifting medium does not cease when the oil is brought to the top of the flow string as it must also force the oil through the lead or flow line to the gas trap. Thus the pipe and connections from the top of the well to the gas trap are really part of the flow pipe. It takes pressure on the expanding gas to force the oil and gas mixture through the surface piping and the amount of pressure is partially fixed by the size, length and number of turns in the piping. This pressure is transmitted to the bottom of the well and therefore against the reservoir pressure. As the reservoir pressure diminishes and the energy necessary for lateral movement of the oil and gas increases, it is certain that sooner or later the pressure at the bottom of the well will be inadequate to flow the oil unless the back pressure at the top of the well can be decreased.

Obviously, the number of turns in the surface lines should be a minimum and the trap should be located as close to the top of the flow string as possible. When the flow string is first run it may be desirable to carry considerable pressure at the top of the well but this pressure should be carried on the trap where it can easily be reduced at the option of the operator.

The elevation of the gas trap should be sufficient to allow the oil to flow by gravity to the stock tanks. At the top of the flow string the oil and gas mixture is already traveling in a vertical direction and a few feet added to the vertical height of the flow pipe adds only a small amount of back pressure on the flowing mixture compared to the amount necessary to carry on the trap and force the oil into the tanks where the top of the stock tank is higher than the oil valve on the trap.

When to Run the Flow String

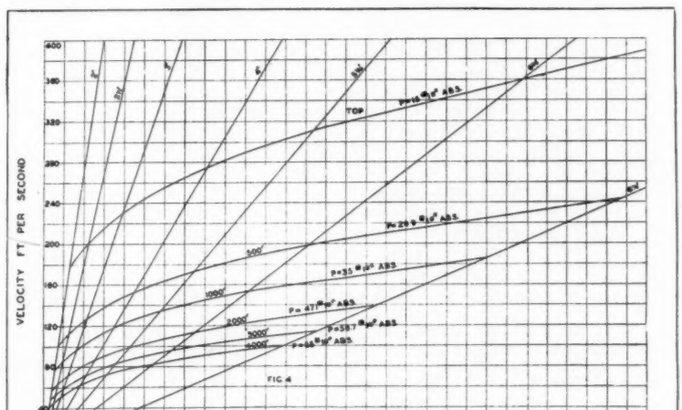
The flow string should be run as soon as a well is completed, shot, and ready to produce. After measuring the gas volume and estimating its flush decline, a flow string should be selected which approaches the critical velocity for the given gas volume. If additional back pressure is desired, a small size of flow pipe should be run. A well preferably should not be allowed to produce through the oil string unless the oil string happens to fit the conditions for a flow string. Running the flow string as soon as possible does not in general increase the oil production, but it does cause a higher amount of back pressure against the face of the producing sand than if the well flowed through the larger oil string.

If a well is allowed to produce through the oil string until the rate of oil production materially decreases, and it possibly shows signs of "dying," the probabilities are that a smaller oil string will temporarily reduce the daily oil production until the pressure conditions at the bottom of the well are adjusted to the changed condition of higher back pressure. It is usually the conclusion that the flow string should have been run sooner, for experience in the Mid-Continent fields teaches that increasing back pressure at a delayed date does not seem to have the desired effects.

Practical Field Suggestions

It is desirable to install a trap at a well before the well is completed if experience with nearby wells indicates that the well will produce with a fair amount of gas. The oil string should be connected to the trap so that it can be used before the flow string is run.

An orifice meter installed on the gas discharge line from the trap is well worth its cost. It gives a correct measurement of the amount of gas the well makes prior to its completion and a study of the meter



charts should be the main factor influencing the decision on the size of flow string which should be run in the well. After a flow string is run the measurement of gas volumes furnishes information so necessary to handle a flowing well intelligently.

It is the opinion of the writer that in Mid-Continent wells the end of the flow string should be hung at approximately the top of the producing sand and that nothing should be put on the end of the pipe except a thread protector.

It may be advantageous on some wells producing very small volumes of gas and oil to run a packer on the flow string, but in the majority of cases a packer is unnecessary and most times it is not desirable. Packing the well at the control head permits the use of a pressure gauge, preferably a recording one, to indicate the inlet pressure at the bottom of the flow string and likewise the approximate back pressure at the oil sand. Also, if the flow string is too small at first and back pressure is not desirable at the bottom of the well, part of the gas and even some of the oil that would otherwise be forced up the flow string, can be produced through the annular space between the flow string and the casing. A further practical advantage in running tubing without a packer is that a well can continue to flow between the casing and tubing while the tubing is being run. A disc placed in the flow string will prevent oil from spraying into the derrick. By using a disc and one of the tubing or casing oil-savers on the market, there is very little waste of oil and the workmen are safer and do better work.

The practice of dropping a weight to break the disc in the flow string is not recommended. The weight should be attached to the sand line. By the latter method the weight can break the disc and then be run on through the pipe to insure that no part of the disc remains in the flow pipe to restrict the flow of oil and gas. One disadvantage to the practice of running a weight on the sand line is the danger in wells where the pressure below the disc might be sufficiently great enough to blow the weight up the flow string and "kink" the sand line.

The flow string should be of uniform size throughout its length unless there is a source of high pressure gas or air available to "kick off" the well in case it refused to flow after the casinghead is closed. A uniform flow string permits swabbing to start the well flowing. This may be very important for it is often necessary to swab a well for a considerable length of time before it will continue to flow. One well known to the writer required two days of swabbing to start it to flowing, although it continued to flow for six months without interruption.

Conclusion

This paper has attempted to point out the opportunities to Mid-Continent operators in producing many wells economically during the flush stage by taking advantage of the expansion of the compressed gas, which nature has stored with the oil, and using some of this expansive energy in flowing.

In the Mid-Continent the volume of the gas under reservoir pressure is several times the volume of the oil with which it associates. The winding minute channels in the sand afford a limited passageway for the movement of oil and gas mixtures and there is nothing to be gained by increasing, through expansion, the volume of the gas as it proceeds through the winding channels unless more energy is needed for moving the mixture. If more energy is needed it can be secured by reducing the back pressure against the face of the sand.

Oil is a liquid and cannot travel as rapidly through the minute, winding channels in oil sands as can gas, and for that reason the velocity of the expanding gas must be controlled to suit the maximum velocity for the oil and this control is secured by applying back pressure at the bottom of the well.

The amount of back pressure that should be imposed against the face of the producing sand during the flush stage of production is problematical, but regardless of what this maximum back pressure should be, the operater can at least feel justified for a certain length of time in holding the amount of pressure at the bottom of the well that is necessary to flow the production to the surface. If the well is properly swabbed or agitated, the oil production will compare favorably with the amount that can be produced if the well is properly equipped to flow, but in the former case the gas does most of its expansion through the winding channels in the sand where its full expansion is unnecessary unless the reservoir pressure is relatively low. Therefore the cost of swabbing or agitating can be eliminated if a certain amount of pressure is maintained at the bottom of the well so that part of the expansion of the gas can occur in the flow pipe.

The rate of expansion of the compressed gas per lineal foot of flow pipe is quite important and this rate of expansion can be controlled by running the proper size of flow pipe or by applying back pressure at the top of the well.

The writer feels that the discussions and data offered in this paper justify the statement that there is a maximum rate of gas flow through a given size of flow pipe against atmospheric pressure if all the oil entering the well is flowed to the surface and if a relatively low pressure is maintained to flow the well. Therefore, if the rate of expansion of the gas is to be controlled by restricting the flow to a certain size of pipe, a measurement should be made of the volume of gas which the well produces and a suitable size of flow string selected to fit the above conditions. The volumes of gas as given in Table 2 are suggested as the approximate maximum volumes of gas which should be expanded through the given sizes of pipe against atmospheric pressure to lift all the oil that can enter the well with a relatively low back pressure on the sand. It is assumed that the gas-oil ratio will be more than 1,000 cubic feet of gas per barrel of oil.

If back pressure is applied at the top of the well to control the expansion of the gas up the flow string there will be a higher back pressure against the face of the producing sand than would be the case if the expansion were controlled by running the proper size of flow pipe. If back pressure is applied at the top of a given size of flow pipe for the purpose of increasing the back pressure on the sand, then the problem is to ascertain by trial how much back pressure can be applied before the minimum rate of expansion occurs in the flow pipe and the rate of oil production decreases.

As the reservoir pressure gradually decreases, with the age of the well and field, more of the expanding gas is required to force the oil into the well and consequently less pressure is available to expand the gas up the flow pipe. If the well is to continue to flow its production, all unnecessary back pressure at the top must be eliminated.

The writer believes that a better understanding of the factors affecting the life of the type of flowing wells found in the Mid-Continent will influence the operators in that district to produce their "flush" oil more economically and to increase the ultimate yield of the wells by studying the effects of back pressure applied against the face of the producing sand.

OKLAHOMA CITY AREA SALE

An undivided one-half interest in all checkerboard wildcat acreage which the Phillips Petroleum Co. had assembled in Townships 5n to 14n inclusive and in Ranges 1e to 5w inclusive, in the Oklahoma City area, has been sold to The Texas Company. The sale did not include a large block of acreage owned by the Phillips company in Sections 3, 4, 5, 8 and 9 in Township 10n, 2w. President Frank Phillips said: "It is to the advantage of both companies to have a partner to share development expense in this area where producing horizons are deep and drilling costs are correspondingly high."

ANTITHEFT COMMITTEE

SHREVEPORT, La., Jan. 12.—Not that theft of equipment from leases has grown to such proportions as to make extraordinary action necessary, but in carrying out the general association's recommendations in reducing, or holding such losses to a minimum, the Louisiana-Arkansas division of the Mid-Continent Oil and Gas Association has established as a permanent feature an antitheft committee with R. E. King of the Gulf Refining Co., as chairman. It is probable that a similar committee may be set up in El Dorado to handle the situation in Arkansas.

Variations in Hunton Lime Demonstrated by Western Lincoln Log

By Malvin G. Hoffman
Geologist, Buckeye Oil Co.

There is at present a great deal of discussion over the producing horizon of the Oklahoma City well because it is in an area where the deeper formations are not well known and differ to some extent from horizons of the same age in better known areas. It was therefore felt advisable by the writer to describe briefly a geologic section in the northwestern part of Lincoln County, Oklahoma, where the column has been determined from a microscopic study of the cuttings and the Hunton section in particular was found to show variations not seen in other deep wells, for example, in Seminole and eastern Pottawatomie Counties where until recently most of the material used in the study of these formations has been obtained. It is probable that this section might furnish a link between the known areas and the newly discovered area in Oklahoma County.

The cuttings specifically referred to in this article came from the well in the SW cor. SE, Section 34-17n-2e, drilled by the Wentz Oil Corp. of Ponca City, Okla. This well was drilled on a surface structure which was discovered, and mapped in detail by the writer. The structure was detailed on red sandstones and limy sandstones in the Stillwater formation of lower Permian age. The surface beds are principally red sandstones and shales, some of the sandstones being slightly limy, and interrupted at a few places in the section by grayish beds. The regional dip is southwesterly at about 40 feet to the mile.

Following are the major divisions of the subsurface section:

	Feet
Permian beds	0- 600
Pennsylvanian beds	600-4,495
Mississippian limestone	4,495-4,540
Chattanooga shale	4,540-4,576
Hunton formation	4,576-4,654
Sylvan shale	4,654-4,750
Viola limestone	4,750-4,777
Simpson formation	4,777-4,814
Wilcox sand	4,814-4,846

Permian Section

Permian Section: The first 600 feet was composed largely of red shales and red sandy shales through which the rotary bit drilled very rapidly. Progress was greatly retarded when at 600 to 608 feet a hard gray crystalline limestone was encountered which was regarded as the Cushing limestone. The cuttings of this bed appeared identical with the cuttings of the Cushing limestone found in wells in the Mehan Field about 10 miles northeast of this test. Then too, it had just about the thickness of the Cushing and was the first hard gray crystalline limestone immediately below the series of red sands and shales, which is the stratigraphic position of this bed, the Neva limestone having become red and sandy before it gets this far southwest. Although the Cushing limestone is below the usually accepted contact between the Permian and Pennsylvanian it was here taken as the dividing line because it is not far removed from the top of the Pennsylvanian series and in this section marked the first definite change. The entire 600 feet of strata above this limestone bed fall together as a unit and no bed or zone in it appeared to mark a separation.

The Pennsylvanian

Pennsylvanian Section: From the top of the Cushing limestone at 600 feet, above referred to, to the top of the "Mississippi lime" at 4,495 feet was taken as the Pennsylvanian section. The top of the Pawhuska limestone was reached at 1,495 feet and the Oswego limestone was found at 4,100 to 4,165 feet.

Most of the Pennsylvanian sands carried salt water but in a sand at 1,483 feet gas was discovered strong enough to show through the rotary mud and several bailers of heavy black oil were found in the shale just above the Bartlesville sand at 4,305 feet.

Mississippi Section: The "Mississippi lime" and the Chattanooga shale made up the section from 4,495 to 4,576 feet. The limestone was a hard gray to dark gray series of beds only 45 feet thick, 4,495 to 4,540 feet, this being much less than the thickness usually found for this formation. The shale was the typical black pyritic Chattanooga shale 35 feet thick, 4,540 to 4,576 feet. Several oil shows were found in the "Mississippi lime."

Hunton Section

Hunton Section: There was no attempt to separate the Hunton into the Devonian and Silurian divisions because the stratigraphic divisions are readily determined and are more often used than the time scale. The Hunton was easily divisible into five beds on a color basis as well as on the character of each bed.

Following is the log of the Hunton formation:

	Feet
Hard white lime	4,576-4,581
Dark green limy shale	4,581-4,597
Hard white lime	4,597-4,607
Reddish-brown hard limy shale	4,607-4,610
Hard white lime	4,610-4,654

The basal 3 or 4 feet from about 4,650 to 4,654 showed some gas and oil and about 50 feet of high gravity green oil was bailed out of the hole.

Ordovician Section: The Sylvan shale extended from 4,654 to 4,750 feet. The upper part was dark green and with depth graded to more of a bluish color.

From 4,750 to 4,777 feet was a 27-foot thickness of white crystalline Viola limestone. The Simpson formation immediately below the Viola was gray dolomitic limestone to 4,784 where a good gas and oil show was encountered, the oil rising some 350 feet, and being of a high grade live green oil. From this point to its base at 4,814 feet the Simpson was brownish in color.

The Wilcox sand was topped at 4,814 feet. The sand was fine grained and somewhat angular with only a few rounded grains. It was of a brownish cast but gradually became lighter in color until at 4,835 feet it was pure white. Drilling was continued in this sand to a total depth of 4,846 feet at which depth the hole filled with salt water. It was stopped at this point and plugged; 4,846 feet marking the total depth of the test.

NEW INLAND SALT DOME PROSPECT NEAR BETHEL, ANDERSON COUNTY

By Neil Williams

CORSICANA, Tex., Jan. 14.—Another inland salt dome prospect was proved up as a salt dome the past week when Pure Oil Co. drilled into salt in its No. 2 Willie Bruce at Bethel, Anderson County. The test topped the salt at 3,448 feet and drilled to a total depth of 3,480 feet.

Bethel is in the northwestern part of the county and west across the county from Boggy Creek, the inland salt dome field being developed by the Humble Oil & Refining Co. and Rio Bravo Oil Co. Pure Oil Co. has been drilling at various points on the dome prospect but other tests were abandoned without finding the salt.

In addition to Boggy Creek and Bethel, another known prospect in Anderson County remains to be proved, this being at Keechi, where J. S. Cosden and associates have been drilling. At this place these operators have been keeping one rig running, the latest test being No. 2 Douglass, I. Simpson Survey, which Saturday was drilling shale and lime at 2,887 feet.

Boggy Creek

At Boggy Creek, which is on the Anderson and Cherokee County line (Neches River), drilling continued more or less routine although another test on the southeast flank is down to the interesting depth of 3,673 feet where it is drilling in sand topped at 3,670 feet. This is Humble's No. 1 Coleman, A. C. Bullock Survey.

Humble's No. 1-B Todd (A. E.), M. Roberts Survey, is drilling chalk at 3,465 feet, this being topped at 3,450 feet. No. 1 Callier is drilling lime at 2,998 feet; No. 3 Lizzie Smith in shale at 720 feet, and No. 4 Weinberg (northeast flank) in lime at 3,949 feet. No. 1 C. W. Hurd is rigged up and piling is being driven for a derrick for No. 1 Neches River.

In Cherokee County, Woodley & Nichols' No. 1 Kennedy, William Brewer Survey, has drilled to 4,338 feet in shale but at present is shut down. Amerada Petroleum Corp.'s No. 1 Christian, Smith County, has gone into the red beds, drilling in this formation at 5,205 feet.

An interesting wildcat just starting is Pure Oil Co.'s No. 1 Neils, Van Zandt County, this county being one of the most northernmost in what is known as the inland salt dome district of East Central Texas.

In the structure fault district of the Corsicana district, Hicks & Deering's No. 1 Stroud, Limestone County, is drilling hard shale and lime at 4,397 feet. Pine Oak Oil & Gas Co.'s No. 1 Forest, same county, has been shut down in shale at 2,410 feet. J. K. Hughes and associates' No. 1 McGowan, Navarro County, is drilling chalk at 2,360 feet.

All other tests in East Central Texas are standing at previously reported depths.

Daily Average Production

Daily average production of the district totaled 22,150 bbls., an increase of 173 bbls. Figures by fields are:

East Central Texas

Boggy Creek	2,505
Cedar Creek	200
Currie	527
Mexia	6,161
Minerva	720
Nigger Creek	465
Powell	9,547
Richland	465
Thrall	35
Wortham	1,525
Total this week	22,150
Total last week	21,977
Increase	173

GREATER BUYING IN OKLAHOMA MARKET

(Continued from Page 32)

U. S. Motor gasoline with a similar price schedule for the high gravities. In natural gasolines, one of the largest manufacturers started storing when Grade AA slumped below 6 cents. Another started storing at 5½ cents and a third manufacturer has set his minimum price for spot business at 5¼ cents. These refiners and manufacturers will take care of their regular contract customers at the prevailing market but will store any surplus in excess of this demand.

There is considerable empty storage at refineries and natural gasoline plants. In the refinery end the report of the Bureau of Mines for November shows that on November 30 the gasoline storage was 12,000,000 bbls. under the peak. The heaviest storage on record for United States was on April 30, 1927, when the gasoline stocks totaled 52,532,000 bbls. The closest approach to this peak during 1928 was on March 31, when the stocks totaled 40,229,000 bbls. On November 30, 1928, the latest available report of the Government, the stocks totaled 29,075,000 bbls.

Refiners are not desirous of accumulating heavy storage. The fact that they were able to enter the main consuming season of 1928 without having excessive stocks was responsible for the favorable market of the last six months of the year. They feel, however, that due to the increased demand assured for 1929 they can accumulate several million barrels more gasoline than they did in the spring of 1928 without sacrificing their summer market.

Crude Situation

With this situation in mind a large number of refiners in all parts of the country will be slow in lowering their prices, prefering to store whenever necessary. This will tend to stabilize the market for a few weeks at least. As expressed by one refiner, "storage will tend to stabilize prices until spring and then what happens will depend entirely on the crude oil situation at that time."

One of the bearish factors in the gasoline market during the past 60 days has been the constantly mounting crude oil production coupled with a certainty that the peak has not yet been reached. A continued overproduction of crude oil would unquestionably nullify any progress made by refiners in controlling their own refinery operations and for that reason refinery operators are watching developments in the crude oil producing branch of the industry as much as they are the factors more directly concerned with refinery markets.

Gasolines and Naphthas

The weighted average prices for the principal grades of gasoline as reported by Oklahoma refiners on Monday, January 14, were as follows: 58-60 U. S. Motor, 8 cents; 60-62 437, 7.97 cents; 60-62 400, 8.83 cents; and 64-66 375, 9.25 cents. These prices are for sales to jobbers only.

Several refiners reported greater activity in the higher gravity gasolines to domestic customers during the week. The lower prices in natural gasoline have enabled refiners to lower their prices on the highest gravity refinery grades. This has extended their marketing territory and sales are reported in the northern states extending from Montana to Maine. The movement of 68-70 350 and 360 endpoint gasolines was especially strong.

The 58-60 U. S. Motor is the grade giving the refiners the most concern. It constitutes the bulk of their output and competition is so keen that the movement from individual plants is slow. Although the larger refiners were maintaining an 8-cent market to the trade on this grade it was available from other refiners as low as 7¼ cents.

Kerosene and Distillates

Heavier domestic buying with at least one export purchase helped to stiffen the kerosene market in Oklahoma. The Magnolia, Humble and Gulf companies bought substantial quantities for domestic movement in North Texas and this also aided the Oklahoma market. The export purchase was on basis of 5 cents for the 41-43 grade.

Furnace distillates are strong and on Tuesday the cold wave through the middle western states pointed to a heavy demand for the remainder of the week.

Fuel Oils and Gas Oils

So far as Oklahoma is concerned all low cold test fuel oils and gas oils are strong. High cold test products are as weak as the low cold test products are strong. Some of the fuel oils have a cold test of as high as 60 or 65 degrees Fahrenheit. There is little demand for this material and refiners are forced to sell at around 50 cents a barrel or store.

The straw grades of gas oils with a low flash and cold tests are selling as high as 3¼ cents with a low of 2¾ cents.

Natural Gasolines

Natural gasolines continued to decline in price until Saturday. At that time Grade AA was freely available at 5¼ cents, Grade BB at 5 cents and Grade C as low as 4½ cents. On Monday the buying by the large manufacturers got under way and the market began to stiffen. On Monday the buyers had purchased all the Grade AA available at 5¼ cents and the market moved to a low of 5½ cents on Tuesday with scattered sales at 5¾ cents. The B, BB, and C grades also advanced one-fourth cent on Tuesday.

Grade A on Tuesday was steady at 6¾ cents. Many of the trade were predicting a 6-cent price for Grade AA by the end of the week.

Lubricating Oils and Wax

The higher prices on cylinder stocks in Pennsylvania and other Eastern points continue to aid the Mid-Continent refiners. One manufacturer reports inquiries and orders from Eastern jobbers and compounders who previously purchased from Eastern refiners. The export demand also continues active. The wax market was dull during the week and prices were unchanged.

Late Fields

OKLAHOMA

T. B. Slick's No. 1 Wyeka, NW cor. SW SW, Section 24-5-7, which had been shut in with a hole full of oil pending the erection of tankage, was opened up at 10 o'clock Monday night and it flowed a head of 105 bbls. of oil in 30 minutes, after which it was shut in again. It was expected Tuesday that the well would be deepened.

The Shell Petroleum Corp.'s No. 1 Glass, NW cor. SE, Section 26-7-6, topped the Gilcrease at 3,183 feet, found the base at 3,208 feet and the 24-hour gauge taken Tuesday morning showed 30,000,000 feet of gas and 50 bbls. of oil. The well was drilled to a total depth of 3,222 feet.

In the same district south of the Little River area, the Carter Oil Co.'s No. 1 Factor, SE cor. NW, Section 26-7-6, topped the Gilcrease at a depth of 3,120 feet Monday. It was deepened to 3,145 feet, where it was shut down with 2,700 feet of water in the hole and a show of oil.

Production reports from the Indian Territory Illuminating Oil Co. and Foster Petroleum Co.'s No. 1 Trosper, near Oklahoma City, show that in the first 15 days of January this well yielded 85,656 bbls. of oil. Its production up to the beginning of the current month was 110,456 bbls. Thus this interesting wildcat has produced a total of 196,112 bbls. of oil since it came in on December 5, 1928.

WEST TEXAS

FORT WORTH, Tex., Jan. 15.—Plains Drilling Co.'s No. 2 Saunders, Section 4, Block 1, A.C.H.&B. Survey, in the Lefors area of Gray County, flowed 1,200 bbls. of 41.5 gravity oil in 12 hours from pay at 2,555-56 feet. The Texas Company's No. 7 Saunders, same section, made 660 bbls. of fluid, 30 per cent water, in six hours from pay at 2,650-61 feet.

Hendricks Pool in Winkler County, was extended half a mile to the south by Skelly Oil Co.'s No. 1 Hendricks-C, NW cor. SE Section 10, Block B-12, when it made 500 bbls. of pipe line oil from 3,028-31 feet.

GULF COAST

HOUSTON, Tex., Jan. 15.—Gulf Production Co.'s No. 2 Burrell, Fannette Dome, Jefferson County, blew out Monday and caught fire and late Tuesday apparently was sanding up, cutting production from a former estimate of 4,000 bbls. to an estimated 200 bbls. daily. This is the second well on the dome and is 600 feet south of the same company's No. 6-A Bordages, the discovery well, completed two months ago pumping 100 bbls. daily. The well since has quit. No. 2 Burrell blew out while coring slightly below 5,600 feet where plug was drilled. A breeze blew the gas into the lighter boilers, igniting the well. The well had been showing heavily of gas and casing had been set to protect the hole.

Gulf Production Co.'s No. 46 Davis at Big Creek, Fort Bend County, was completed Monday flowing 3,800 bbls. daily from sand at 3,624 feet. This was an old well deepened.

CALIFORNIA

LOS ANGELES, Calif., Jan. 15.—General Petroleum brought in five new wells at Santa Fe Springs during past few days and increased its daily production 17,670 bbls. No. 103 Hill-Midway came in flowing 5,320 bbls.; No. 153 Anderson, 3,375 bbls.; No. 101 Elliott, 3,500 bbls.; No. 190 Santa Fe, 2,125 bbls., and 191 Santa Fe Community, 3,350 bbls. daily.

POSTPONE MEETINGS OF KANSAS-OKLA. OIL MEN

The general meeting of Kansas producers called for January 18 at Independence and of Oklahoma producers, called for January 22 at Tulsa have been postponed because the dates do not allow sufficient time for producers to become fully acquainted with measures to be discussed. The purpose of the meetings, called by the Mid-Continent Oil and Gas Association was to consider the two conservation bills proposed to the American Bar Association designed to better enable the oil industry to bring about an orderly production of oil and maintain a closer relation between supply and demand.

The executive committee of the Kansas-Oklahoma division of the Mid-Continent Oil and Gas Association having received copies of the proposed measures, which have been referred to it for consideration and being desirous of obtaining the consensus of opinion within the industry regarding them and whether they should be submitted to the legislature of each of the states, had arranged for two general meetings of oil producers and royalty owners.

Each corporation, partnership or unit owning oil production will be entitled to a delegate and a vote in the meeting. To secure orderly voting by bona fide producers and royalty owners, it is suggested that each corporation or unit furnish its delegate or representative with written credentials in the form of a letter to be filed with the secretary of the meeting. From these letters the roster of voting delegates will be made up and the meeting will then be properly organized for the transaction of business.

J. C. Denton is president of the Kansas-Oklahoma division, Mid-Continent Oil and Gas Association; C. C. Herndon, first vice president; John H. Kane, vice president for northern Oklahoma; A. M. Landon, vice president for Kansas; Wirt Franklin, vice president for southern Oklahoma; and Harry H. Smith, secretary.

PRESIDENT OF KEWANEE BOILER CORP. IS DEAD

Emerit E. Baker, president of the Kewanee Boiler Corp., Kewanee, Ill., since its organization in 1892, died January 1 in Hot Springs, Ark., where he had gone in the hope of regaining his health. The burial was in his home city, Kewanee, which looked upon him as its leading citizen. The Kewanee Boiler Corp. was capitalized at $100,000 at first and this capitalization was increased later to $3,500,000. The company now has an annual payroll of $2,000,000 and employs 1,300 men.

Mr. Baker, who was 73 years old, had resided in Kewanee since 1876, when he entered the employ of the Haxtun Steam Heater Co., of which he later became vice president, treasurer and director, the name of the concern having been changed in the meantime to Western Tube Co.

JOHN D. DWYER DIES AFTER BRIEF ILLNESS

John D. Dwyer, aged 57 years, independent oil operator, died Tuesday afternoon in Tulsa after a brief illness. He had been ill at his home since shortly before Christmas but his condition was not regarded as serious until noon Tuesday when he was removed to a hospital.

Born in Oil City, Pa., July 17, 1871, Mr. Dwyer moved to Tulsa in 1908. He was an oil producer in Pennsylvania before moving to Tulsa, since which time he had been engaged in oil production.

He is survived by the widow, Mrs. Mary C. Dwyer, and two sons, William C. and John P. Dwyer, of Tulsa; one brother, Dr. J. E. Dwyer of Saint Cloud, Minn., and three sisters, Mrs. Edward R. Boyle, Mrs. Frank O'Day and Miss Mary Dwyer, all living in Oil City, Pa.

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REFINERY CHANGES IN LOUISIANA-ARKANSAS

(Continued from Page 125)

Shreveport Producing & Refining Co. stock by Shreveport-El Dorado Pipe Line Co. was accomplished later in the year and ratified by the stockholders early in December.

The Louisiana Oil Refining Corp. has increased its Bossier City, La., Plant "A" 14,000 bbls. capacity by 30 per cent. Routine betterments, replacements and alterations, small of themselves but important in accomplishing increased returns from crude run, were completed by Crystal Oil Refining Corp. at its Cedar Grove, Shreveport, plants and by The Texas Company at Ardis, such as addition of a heat exchanger, new pumping capacity and rearranging storage facilities.

Arkansas Changes

T. H. Barton, former president of the old El Dorado Natural Gas Co. and vice president of the Natural Gas & Fuel Corp., when it became a subsidiary of the Arkansas Natural Gas Co., since the first of the year has been president of the Lion Oil Refining Co. at El Dorado, Ark. The company has added to its plant a vapor recovery system and a new type of tube still designed by Sylvestre Dayson, plant superintendent.

The Root Refining Co. completed a $400,000 improvement program during December which doubled plant capacity from 4,000 bbls. to 9,000 bbls. daily. A second Dubbs unit and two pipe stills of 2,500 bbls. capacity each were added.

The Kettle Creek Refining Co. has installed a tube still installation running 60,000 bbls. of crude per month with an increased recovery of improved quality products. MacMillan Petroleum Products Co., which took over the plant of the old Newark Refining Co., scrapped all the old equipment save one tube still and installed the Boner & Sheldon process and are specializing in lubs rather than motor fuel and burning oils, running 1,600 bbls. daily.

Union Asphalt Co., organized by local capital, built a plant adjoining Lion Oil Refining Co.'s plant at El Dorado to run 1,500 bbls. of Smackover heavy crude and residuum from the Lion plant into asphalt, for road and building material uses, road oils, etc. James B. Berry & Sons Co. carried out a routine program of replacements and betterments to their asphalt plant adjoining the MacMillan Petroleum Products Co.'s plant.

New Plants

Two new plants are in prospect for this division during 1929, both in Arkansas. Officials of MacMillan Petroleum Products Co. announced in El Dorado during December that the present plant will be doubled in capacity and moved to a new location on the Missouri Pacific tracks a mile south of Norphlet in the Smackover oil field. Construction of the new unit, to cost approximately $250,000 was to be begun during January with completion scheduled for some time in March. As soon as it is in operation the present plant of 1,800 bbls. capacity will be shut down and moved to Norphlet. Total expenditures on this program, including purchase of site, new unit, dismantling and rebuilding the present unit, will be around $500,000.

The other plant is proposed to be built by Little Rock capital and located either in Little Rock proper or across the Arkansas River in North Little Rock. William Brink, inventor of a new distillation process, is the chief figure in the plan which contemplates a 1,000-bbl. refinery using his process. It will operate under license from the General Products Co., of El Dorado which also owns patent rights to the equipment used by the Brink process. This company was formed to finance Brink's experiments which were carried on in small experimental plants at El Dorado for several months.

WEST TEXAS FIELDS

(Continued from Page 44)

Quinn, located 330 feet from south and east of Section 11, Block 34, Township 1s, topped the salt at 1,070 feet, topped the lime at 3,101 feet, had an oil show at 3,180-85 feet and was dry and abandoned at 3,749 feet.

Pecos County

California Co.'s No. 5 Smith (lease No. 1), located in Section 23, Block 194, topped the lime at 1,610 feet, topped the pay at 1,660 feet, was drilled to a total depth of 1,930 feet and had an initial production hourly of 60 bbls. McMan Oil & Gas Co.'s No. 3-C Smith, located 2,600 feet from north and 1,800 feet from east of Section 25, Block 194, topped the salt at 1,040 feet, topped the pay at 1,631 feet, was drilled to a total depth of 1,694 feet and made 60 bbls. hourly. Mid-Kansas Oil & Gas Co.'s No. 4 Smith, located 250 feet from north and 3,565 feet from west of Section 31, Block 194, topped the lime at 1,455 feet, topped the pay at 1,425 feet, was drilled to a total depth of 1,650 feet and had an initial production of 210 bbls. hourly. Yates Ranch Oil Co.'s No. 1 Yates, located 330 feet from south and 2,196 feet from east of Section 70, Block 1, was dry and abandoned at 1,648 feet.

Reagan County

Big Lake Oil Co.'s No. 152 University made 305 bbls. at 2,875-91 feet. Its No. 154 University made 667 bbls. at 3,015-23 feet. Its No. 155 University made 175 bbls. at 3,040-59 feet. Its No. 156 University made 175 bbls. at 2,938-49 feet and its No. 157 University made 330 bbls. at 2,877-2,900 feet.

Sutton County

Phillips Petroleum Co.'s No. 1 Cowthorn, 330 feet from north and west of NE of Section 17, C.C.S.D.&R.G.N.G. R.R. Survey, was dry and abandoned at 975 feet.

Upton County

Texas Pacific Coal & Oil Co.'s No. 12 Lane-A, located 1,650 feet from south and 2,310 feet from west of Section 5, G.C.&S.F.R.R. Survey, had an initial production of 150 bbls. at 2,007-18 feet.

Winkler County

Atlantic Oil Producing Co.'s No. 6 Hendricks-E made 25,000 bbls., 12 per cent water, at a depth of 2,600-2,700 feet. Culberson Brothers' No. 1 Hendricks, 1,650 feet north and west of SE cor. Section 40, Block B-4, made 125 bbls. in 15 hours at 2,660-3,025 feet. Gulf Production Co.'s No. 31 Hendricks, 330 feet north and 2,310 feet west of Section 40, Block B-5, made 250 bbls. in 19 hours, 26 per cent water, at 2,680-3,073 feet. The Texas Company-Shell company's No. 5-A Cowden, 2,200 feet north and 990 feet west of Section 3, Block B-12, topped the lime at 2,533 feet, topped the pay at 2,655-3,030 feet, and had an initial production of 396 bbls. in six hours, 1 per cent water. Southern Crude Oil Producing Co.'s No. 7 Hendricks T-88-I, located 330 feet north and 990 feet east of Section 30, Block B-5, made 400 bbls. daily at 2,726-3,027 feet. Its No. 3 Hendricks T-88-S, located 440 feet north and 330 feet west of Section 34, Block 26, topped the lime at 2,348 feet, topped the pay at 2,675 feet, was drilled to a total depth of 2,703 feet and had an initial production of 110 bbls. hourly, 19 per cent water. Its No. 1 Hendricks T-88-W made 1,372 bbls., 1 per cent water, at 2,760-2,995 feet.

PECOS COUNTY
Week Ended Jan. 12, 1929
Yates Pool

Company and lease—	Wells	Bbls.
California Co.:		
Yates, Lease 1	17	7,071
Smith, Lease 1, Sec. 27	3	416
Smith, Lease 1, Sec. 23	5	676
Smith, Lease 2	2	177
Smith, Lease 3	12	1,917
Tippett, Lease 1	1	58
Cosby Drlg. Co.:		
M. A. Smith	1	366
Gulf Prod. Co.:		
All leases	32	9,298
Humble Oil & R.f.:		
M. A. Smith	10	1,269
Smith-B	5	641
Kirby Pet. Co.:		
J. H. Tippett	1	72
Kirby Pet. & Edso:		
Tippett	1	203
Marland Oil Co.:		
Yates-A	9	1,091
Matador Oil Co.:		
Smith	2	363
Mazda & Savoy:		
Smith	2	95
McMan Oil & Gas Co.:		
Smith-A	1	520
Smith-B	4	1,170
Smith-C	4	632
Tippett	3	315
McMan & Marland:		
Yates	17	3,532
Mid-Kansas & Transcontinental:		
Yates-A	24	9,629
Yates-B	25	4,629
Yates-C	10	4,536
Yates-D	6	5,823
Yates-E	1	117
Yates-F	4	643
Yates-G	4	1,022
Yates-H	7	4,822
Smith	3	1,006
Smith-Taylor	18	2,082
Oil Operators Trust:		
Pecos River	7	750
Pecos Valley Oil Co.:		
Fee, Sec. 22, Blk. 16	1	108
Phillips Pet. Co.:		
Smith	1	80
Red Bank Oil Co.:		
Smith	5	143
Shell Pet. Co.:		
Tippett	11	1,924
Smith	9	925
Smith-B	1	537
Smith-D	3	406
Smith-E	1	38
Simms Oil Co.:		
Smith	7	4,221
Skelly Oil Co.:		
Tippett	1	100
Texon Oil & Land Co.:		
Yates	2	0
Grand total Yates Field	283	73,030

WINKLER COUNTY
Week Ended January 8
Hendricks Pool

Company, farm, section and block—	Wells	Prod.
Amerada Pet. Co.:		
Cowden, 3, B-12	2	810
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	8	1,366
Hendricks-B, 44, 26	3	470
Hendricks-D, 29, B-5	8	2,220
Hendricks-E, 41, B-5	5	2,179
Hendricks-G, 40, 26	7	2,250
Hendricks-H, 30, B-5	1	33
Atlantic & Collett:		
Hendricks-F, 40, 26	12	4,391
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	152
California Co.:		
Hendricks, 29, B-5	8	1,385
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	215
Hendricks-B, 35, B-5	1	132
Hendricks-C, 33, 26	2	296
Hendricks-D, 33, 26	1	off
Hendricks-E, 33, 26	2	519
Eastland Oil Co.:		
Hendricks, 33, B-5	2	415
Hendricks-B, 35, B-5	1	91
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	12	3,600
Hendricks-B, 45, 26	10	8,790
Hendricks-C, 40, B-5	5	2,525
Humble Oil & Ref. Co.:		
Hendricks-A, 34, B-5	17	5,102
Hendricks-B, 29, B-5	6	1,119
Hendricks-C, 32, 26	8	1,094
Hendricks-D, 47, 26	5	1,160
Independent O. & G.:		
Hendricks-A, 34, B-5	7	1,686
Howe-B, 44, 26	2	108
McCabe, 36, B-5	2	408
Hendricks, 42, B-5	1	19
Vardeman-B, 41, B-5	6	1,170
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	815
Marland Oil Co.:		
Hendricks, 33, 26	4	1,343
Hendricks-A, 29, 26	2	265
Hendricks-B, 34, 26	1	187
May Prod. Co.:		
Hendricks, 34, 26	1	65
Mining & Eng. Co.:		
Hendricks, 10, B-22	1	279
Murchison & Cranfill:		
Hendricks-A, 33, B-5	3	1,088
Hendricks-B, 35, B-5	3	909
Hendricks-C, 35, B-5	1	36
Hendricks-H, 33, 26	1	2,112
Hendricks, 47, 26	1	172
Prairie Oil & Gas Co.:		
Hendricks, 40, 26	6	2,960
Cowden, 3, B-12	3	1,333
Pure Oil Co.:		
Hendricks-A, 41, B-5	10	2,239
Hendricks-B, 34, B-5	13	5,152
Hendricks-C, 45, 6	14	10,146
Republic Prod. Co.:		
Hendricks-A, 45, 26	6	1,400
Hendricks-B, 41, B-5	5	775
Hendricks-C, 42, B-5	5	411
Shell Pet. Corp.:		
Hendricks-A, 45, 26	6	2,569
Hendricks-B, 29, B-5	5	1,383
Hendricks-C, 29, B-5	8	3,542
Hendricks-D, 41, B-5	6	1,107
Hendricks-E, 40, B-5	4	1,084
Hendricks-F, 46, 26	7	3,073
Hendricks-G, 39, 26	1	94
Shell-Texas Co.:		
Cowden-A, 3, B-12	6	2,762
Hendricks, 45, 26	6	2,295
Hendricks-A, 29, B-5	10	3,349
Hendricks-B, 40, 26	6	1,264
Hendricks-C, 40, 26	6	3,255
Hendricks-D, 40, 26	6	1,188
Hendricks-E, 40, 26	4	1,960
Skelly Oil Co.:		
Hendricks, 40, 26	12	8,776
Hendricks-B, 39, 26	2	21
Southern Crude O. P. Co.:		
T-67 Hendricks-A, 42, B-5	3	230
T-67 Hendricks-3-A, 4, B-12	4	722
T-67 Hendricks-B, 44, 26	5	819
T-68 Hendricks-3-B, 33, 26	4	726
T-67 Hendricks-C, 33, B-5	5	872
T-68 Hendricks-2-D, 28, 26	3	1,034
T-67 Hendricks-E, 42, B-5	4	253
T-67 Hendricks-F, 33, B-5	4	741
T-68 Hendricks-3-A, 33, B-5	4	456
T-68 Hendricks-B, 46, 26	1	191
T-88 Hendricks-A, 44, 26	6	996
T-88 Hendricks-B, 4, B-12	3	1,336
T-88 Hendricks-C, 29, B-5	7	998
T-88 Hendricks-D, 4, B-12	2	8,219
T-88 Hendricks-H, 28, B-5	5	774
T-88 Hendricks-I, 30, B-5	7	1,492
T-88 Hendricks-J, 30, B-5	5	1,049
T-88 Hendricks-K, 41, 26	4	974
T-88 Hendricks-L, 4, B-12	2	515
T-88 Hendricks-M, 33, 26	29	12,342
T-88 Hendricks-N, 28, 26	4	1,062
T-88 Hendricks-O, 28, 26	1	399
T-88 Hendricks-P, 28, 26	1	329
T-88 Hendricks-Q, 27, 26	1	180
T-88 Hendricks-R, 27, 26	2	1,094
T-88 Hendricks-S, 34, 26	3	1,024
T-88 Hendricks-T, 34, 26	5	911
T-88 Hendricks-U, 41, 26	7	1,702
T-88 Hendricks-V, 29, 26	1	158
T-88 Hendricks-W, 5, B-12	1	1,546
T-89 Hendricks-A, 35, B-5	3	358
T-89 Hendricks-B, 35, B-5	2	522
T-89 Hendricks-C, 35, B-5	1	415
T-89 Hendricks-E, 40, B-5	2	off
T-89 Hendricks-F, 40, B-5	1	137
T-89 Hendricks-H, 46, 26	1	81
T-90 Hutchings, 47, 26	1	118
T-264 Hendricks, 5, B-12	1	off
Texon Oil & Land Co.:		
Hendricks-A, 41, B-5	6	791
Hendricks-B, 45, B-5	5	1,288
Winkler O. P. Co.:		
Hendricks, 33, 26	1	132
Total Hendricks Pool	491	161,433
Leck Area		
Atlantic Kesslar & Logan:		
Leck, 3, 74	2	735
Amerada Pet. Corp.:		
Leck, 3, 74	1	389
Empire Gas & Fuel Co.:		
Daugherty, 3, 74	1	423
Magnolia Pet. Co.:		
Scarborough, 1, C-22	1	89
Shell Pet. Corp.:		
Scarborough, 1, C-22	2	75
Total Leck Area Pool	7	1,692
O'Brien Pool		
Wentz Oil Corp.:		
Tobe Morton, 10, B-12	1	265
Richardson et al:		
Stockton, 50, F	1	350
Total O'Brien Pool	2	615
Grand total Winkler County Pool	500	163,741

REFINING DIVISION TECHNICAL CONFERENCE

The oil refining division of the Cities Service Co. held its annual technical meeting in Tulsa during the past week attended by representatives from all of its refining properties, including the Cities Service Oil Co.'s refinery at East Braintree, Mass., the Crew Levick plants at Petty Island and Titusville, Pa., and the Mid-Continent refineries of the Empire Oil & Refining Co.

Technical papers were read and discussed by the representatives, much of the discussion centering around their own operations. These meetings have been made an annual affair and are now attended by the executives of the respective companies as well as the technologists. Those attending the Tulsa meeting included J. R. Coates of New York, vice president of the Cities Service company in charge of oil operations; R. G. Griswold of New York, chief technologist; Paul R. Jones of New York, secretary of the Cities Service company; Harry D. Frueauff, in charge of refining and marketing of the Cities Service company; J. S. Cordell, general manager of the Cities Service Refining Co., Boston, Mass.; C. E. Foster, general manager of the Crew Levick company of Philadelphia; H. R. Straight of Bartlesville, general manager of the Empire Oil & Refining Co.; Floyd C. Brown of Bartlesville, assistant general manager, and Dr. C. S. Robinson, professor of technology of the Massachusetts Institute of Technology.

COLOMBIA'S OIL EXPORTS CHIEFLY TO AMERICA

WASHINGTON, D. C., Jan. 12.—The exports of crude petroleum from the port of Cartagena, Colombia, during 11 months of 1928 shows very regular movement of this commodity and a marked increase in the quantity of oil imported into the United States, especially during November.

Of the oil imported into the United States in November, 638,349 bbls. went to New York, 348,661 bbls. to Baltimore, 113,797 bbls. to Charleston, S. C., and 89,258 bbls. to Bayton, Tex.

In that month Montreal, Canada, received 231,591 bbls. and Southhampton, England, 127,431 bbls., so that three times as much of the Colombian oil came to the United States as was shipped elsewhere. The percentage of total exports of crude petroleum from Colombia destined to the United States during November was raised to 76 per cent, compared with 51 per cent for October.

The total amount of crude oil exported from Colombia during the 11 months ending November was 16,465,077 bbls. The 1,549,089 bbls. exported into the United States were valued at $2,215,198, and an increase in quantity compared with the previous month of 17,593 bbls.

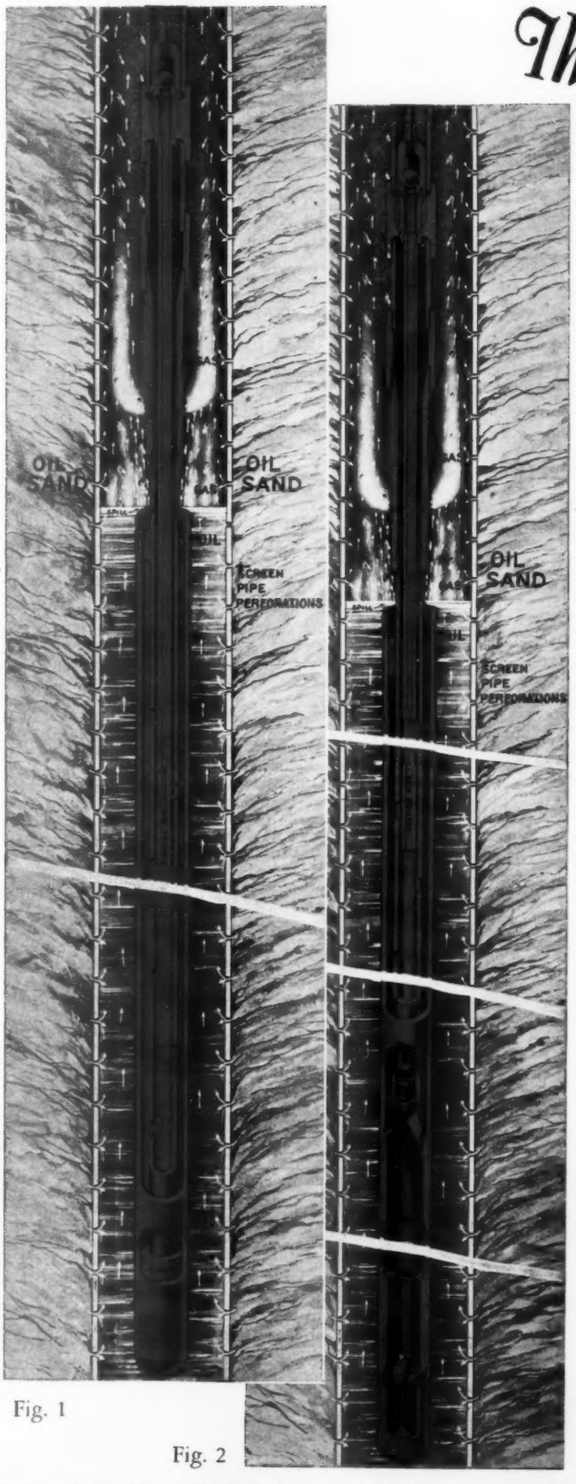

Fig. 1

Fig. 2

The D+B

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highest pumping efficiency...

The D+B Carlson Gas Anchor is designed to overcome gas interference so as to insure the highest pumping capacity of each individual well. It has been subjected to every conceivable test in hundreds of wells and never has failed to increase the production of each one in amounts ranging from ten to two hundred barrels per day.

The D+B Carlson Gas Anchor is essential to maximum capacity in every well where gas interference prevails. It gives complete separation of gas from oil before the fluid enters the pump, traps the gas and eliminates pockets. It admits full volume of oil; stabilizes the fluid; increases pump efficiency; and increases both gas and oil production. Can be run in any oil string in which the working barrel will run; eliminates ball, seat and plunger troubles; can beset at high or low levels.

Patented Nos. 1,662,296 March 13, 1928 and 1,682,114 August 28, 1928. Fig. 1 shows the plain type. Fig. 2 is the anchor with a Reed-York Dump Valve which automatically dumps the sand. Send for complete engineering data together with some very interesting performance records.

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Of Interest to Sales Departments

Acquisition of New England Refinery to Extend Shell Sales

NEW YORK, Jan. 12.—Refiners in the East Coast territory are greatly interested in the announcement that the Shell Union Oil Co. had been the successful bidder for the refinery, terminal, and business of the New England Oil Refining Co. A number of the Eastern companies had been seeking control of the New England Oil Refining Co. since its affairs were placed in the hands of receivers some months ago.

Acquisition of New England Oil gives the Royal Dutch interests in this country a strong foothold in the North Atlantic states, and marks the entry of another major petroleum interest into this territory.

It is expected that Shell Union will immediately set about to strengthen the position of New England company, particularly with respect to its marketing operations in the gasoline and fuel oil divisions. Royal Dutch has a large production in Venezuela and other South American fields and also considerable output of products at its refineries located near these oil fields. The New England Oil Refining Co. will furnish a convenient outlet for South American crude, as well as gasoline and other products refined near the South American producing zones.

In connection with the acquisition of the New England Oil Refining Co. it is pointed out that the Shell Union Oil Co. now has the necessary refinery nucleus for the national distribution of "Shell" products. The Shell Petroleum Corp. (Roxana) has large refineries located at Arkansas City, Kans.; Wood River, Ill., and East Chicago, Ind. The company also is building a 25,000-bbl. refinery on the Houston ship channel. These refineries give the company a source of supply for the distribution of its products throughout the southwest and the middle west as far east as Pennsylvania.

With two coastal refineries the company can distribute its products along the East Coast at points 150 to 200 miles from the coast. On the West Coast the Shell Co. of California for many years has been a major distributor with three refineries in California. With its present refining facilities the subsidiary companies can distribute economically in all states except the Rocky Mountains where the consumption is relatively small.

TO FIGHT NEW YORK TAX

NEW YORK, Jan. 12.—Opponents of the state gasoline tax idea are getting busy again, following announcement from Albany that Senator B. Roger Wales of Broome and Assemblyman Bert Lord of Chenango will introduce a bill to impose a tax on gasoline sales.

A gasoline tax has been formally approved in the Republican program for the new legislature. The Wales-Lord bill is similar to a measure introduced by the same men last year, which failed of passage. The revenue derived from the tax, the bill provides, would be returned to the counties for construction and maintenance of highways.

GOODALL INCORPORATES

CHICAGO, Jan. 12.—Frank H. Goodall, a well-known oil jobber located at Harvard, Ill., has incorporated his business as the F. H. Goodall Oil Co., with a capital stock of $100,000. The incorporators are F. H. and Clarence Goodall and L. J. Andrew. The business will be continued. Mr. Goodall is a brother of Thomas Goodall, an extensive oil jobber at Beloit, Wis., a near-by town.

CITIES SERVICE BUYS MINNESOTA STATIONS

The Southern Minnesota Oil Co., operating a chain of tank and service stations in southern Minnesota and northern Iowa has been acquired by the Cities Service Oil Co., one of the retail marketing organizations of Cities Service Co., it was announced here today.

Assets of the Southern Minnesota Oil Co., which maintains headquarters at Fairmont, Minn., include 14 tank stations and 12 service stations. The newly acquired company operates service or tank stations, or both, at Blue Earth, Ceylon, Fairmont, Hollendale, Jackson, Luverne, Monterey, Searles, Trosky, Winnebago and Worthington, all in Minnesota, and at Armstrong, Rock Rapids and Lester, in Iowa.

J. M. Wolfe, president of the Southern Minnesota Oil Co., has been retained as manager and no changes in officers of the company or in the operating personnel will be made.

RENEW GASOLINE TAX AGITATION IN NEW YORK

NEW YORK, Jan. 12—Efforts for the imposition of a 2-cent gasoline sales tax are expected to be renewed at the 1929 session of the New York State Legislature.

According to reports from Albany, an effort will be made to eliminate the State income tax law through repeal this year, with a gasoline sales tax measure favored to offset this loss in revenue. Sponsors of the sales tax idea make much of the fact that every other state, except Illinois, imposes a tax on gasoline sales, and point to the fact that the proposed 2-cent tax for New York is considerably under that now in effect in many other states.

New York has had an impressive road-building program during the past two years and has made many important additions and improvements to State highways. Imposition of a sales tax on gasoline is being urged to provide funds for the extension of this work, it being planned to give the Empire State a network of state highways second to none in the country.

Proponents of the gasoline tax measure point out that literally hundreds of thousands of motorists from other states tour through New York state in the course of the year, and enjoy the benefits of the fine roads of the State without contributing anything to their upkeep. On the other hand, motorists from New York are confronted with a state tax on gasoline the minute they leave the State, touring in any direction, and contribute in this way largely to the building and maintenance of roads in other states.

CANADIAN FUEL DEMAND

CHATHAM, Ontario, Jan. 12.—The Canadian National Railways are materially extending the use of fuel oil in the mountainous districts of British Columbia. The Vancouver Iron Works have recently completed new service facilities for oil burning and locomotives operating out of Kamloops Junction terminal at Kamloops, British Columbia. These facilities include a main 350,000-gallon storage tank, a 21,000-gallon service tank, and an 8,400-gallon underground sump for receiving oil from tank cars.

Construction is of steel on concrete foundations, the storage and service tanks being encased in framework. Three pumping units are provided to handle the oil. All oil pipe lines are steam heated to provide easy flow in cold weather. The Canadian National Railways has been engaged for some years in a program of converting coal-burning locomotives to oil, and a number of engines working out of Kamloops Junction are already using fuel oil.

GASOLINE TAX REPORT

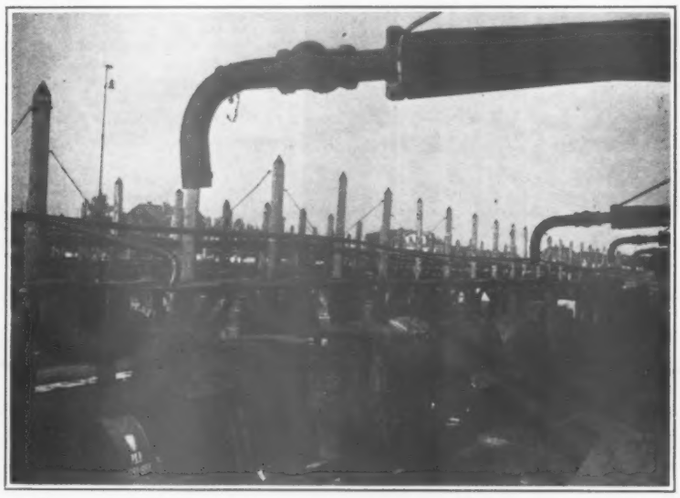
The third annual report of the North American Gasoline Tax Conference held at Memphis, Tenn., October 1, 2 and 3, 1928, is now ready for distribution.

The report consists of 192 pages and will be of special interest to those who are interested in the gasoline tax movement in the United States and Canada. It contains the final text of the Model Law approved by the Memphis conference. Copies of the report are available through William A. McAtee of Jefferson City, Mo.

BUYS SERVICE STATIONS

The service stations of the Webaco Oil Co. in western New York state have been purchased by the Beacon Oil Co., which operates a refinery at Everett, Mass. The Webaco company will continue in the bulk station business.

LOADING GASOLINE IN POLAND



Loading station in Galician district, Poland.

Furnace Oil Sales Give Opportunity For Winter Profit

By W. H. Holcomb*

The advent of the oil burner and its ever increasing popularity, has created a demand for fuel oil that has enabled the oil companies to realize a profit during the winter months. There are many oil companies, however, who are obliged after the automobile touring season, to allow valuable equipment such as trucks, storage equipment, etc. to remain idle; the gallonage distribution curve with such companies, reaches its peak at the end of that season. Where the oil company enjoys a fuel oil distribution, this peak is leveled out so that the curve is gradual—the automobile in summer, the oil burner in the fall, winter and spring have put the oil companies out of the seasonal marketing class.

The oil companies that have been farsighted and promoted the sale of oil burner equipment in connection with their other sales have secured a large volume of fuel oil business which they would not have obtained if they depended on the local oil burner sales organization to turn contracts to them; the oil burner sales opens up an avenue to other sales. Having established the dependability of your organization to your customers through this sale, they will invariably turn their other business such as gasoline, lubricants, washing, greasing, etc., to your company.

It is my belief that the first oil company to handle oil burner equipment was the Pennsylvania Petroleum Products Co. of Providence, R. I. They have, over a period of eight years, handled several lines of equipment and have on their books close to 2,000 fuel oil contracts. An analysis of these contracts shows that the average consumption per installation is about 3,000 gallons.

During the month of June this year, this company entered into the Braden Engineering, Inc.'s distributory production of oil burning equipment, and have sold at retail over 150 burners in competition with 34 other oil burner dealers in their territory. This has resulted in procuring 150 new oil contracts; this season's sales thus far will net them approximately 450,000 gallons of new fuel oil business.

*Winner of "Five Minute Speech Contest" at annual meeting of Independent Oil Men of America.

BUILD WATER TERMINALS

Two independent refining companies operating in California have completed plans for the construction of water terminals in the Los Angeles harbor. The Rio Grande Oil Co. will spend $750,000 on a 12-acre tract with a 900-foot frontage at Long Beach. The improvement will include storage tanks, wharves, pipe lines and other facilities.

The Hancock Oil Co. will construct a 450-foot wharf front. The terminal will have complete facilities for the storage and loading of crude oil and refined products. Both the Rio Grande and Hancock companies operate refineries near Los Angeles.

NEW COMPOUNDING PLANT

CHATHAM, Ontario, Jan. 12.—The Price Oil & Development Co. has purchased a $5,000 site at Edmonton, and will erect a $30,000 building and plant to handle the manufacture of oils, specializing in lubricants. Wainwright crudes, together with imports of Pennsylvania and Russian oils, will be utilized. The company now has plants at Winnipeg, Moose Jaw, Vancouver and Wainwright.

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METHOD OF NATURAL GASOLINE ANALYSES

(Continued from Page 38)

the percentages of iso-butane and n-butane within a small fraction of the amount of the intermediate iso-butane-n-butane mixture actually distilled.

An error may be introduced by the varying temperature of the distilled vapor collected in the receiver of the apparatus, as the conversion of vapor to liquid volume of distillate is accomplished on the basis of the assumption that the temperature of the vapor distillate remains constant between re-evacuations of the receiver. A change of 1 degree Centigrade in the temperature of this vapor represents about one-three hundredth change in the volume of the vapor collected, and a corresponding error in the calculated liquid volume. In order to avoid this error, the vapor receiver is contained in a water bath of several cubic feet capacity, the temperature of which follows the fluctuations in room temperature only very slowly. A mean water bath temperature for the period of an analysis is sufficiently exact.

The conversion of vapor to liquid volume is accomplished using ideal gas laws. It is well known that the heavier hydrocarbon vapors deviate from ideal gas laws especially in the neighborhood of their condensing pressure. The extent and calculated of these deviations is discussed by the writer in an article "A Table of Physical Constants for the Hydrocarbons Occurring in Natural Gas and Gasoline," published in the Petroleum World, October, 1928. While the error thus introduced is ordinarily within the limits of permissible error for practical analytical work, it may be made as desired by taking care always to collect vapor at a partial pressure very much lower than its condensing pressure at room temperature.

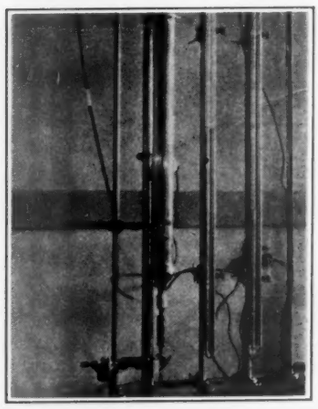

Figure 6—Silvered column illuminated from behind.

A small error not usually appreciated or allowed for is introduced by the fact that any practical fractionating column has an appreciable "dead space" or vapor space which is occupied by a vapor different in composition from that of the liquid being distilled. This results in a small "lag" in the fractional distillation curve equal to the difference in per cents of the most volatile component in the vapor and liquid respectively times the amount of material in the vapor space. In the analysis of gas samples containing only a small amount of the least volatile component it may be desirable to calculate the amount of this lag from the known "dead space" of the column and to correct the analytical results accordingly. It is usually a negligible error.

Design of Columns

The fractionating column of an apparatus based on fractional distillation is of course its most important part, and its design has been the result of considerable experimentation, each variation in design being tested in actual use by different operators in industrial laboratories. Figure 1 shows a column of improved design but without silvered vacuum jacket. The distilling bulb is an integral part of the column and is almost completely surrounded by the vacuum jacket. Heat is supplied to the liquid in the distilling bulb by means of an external heating element consisting of a large number of turns of No. 32 nichrome wire wound on the bottom part of the column with asbestos for insulation. There is no need for an additional cooling bath at the bottom of the column as even liquid methane can be retained in the distilling bulb without being unduly boiled by room temperature. The heat input to the column is controlled precisely and there is no trouble with vapor from a separate distilling bulb becoming superheated in the connection between the bulb and column.

While theoretically preferable and free from lag, the internal heating element has been discarded in favor of an external heating element for the following reasons: (1) The internal heating element is subject to short-circuiting with the mercury used for a seal and cannot be used when the amount of residual liquid is so small that it does not completely cover the heating coil, (2) it is necessarily fragile, cannot be cleaned with acids and if sealed into glass considerably increases the cost of the necessary glass blowing for the column or column assembly and (3) necessitates considerable enlargement of the distilling bulb and undue exposure to room temperature.

However, the most important recent improvement in the fractionating column has been the silvering of the vacuum jacket to improve the thermal insulation of the column. While this appears to be a nobvious improvement, the difficulty has been to retain the visibility which is almost absolutely essential for the operation of the column. The difficulty has been solved most satisfactorily by working out a silvering procedure which deposited a film of silver thick enough to improve the thermal insulation about three times and withal thin enough and so deposit in the vacuum jacket that visibility is retained as shown in Figure 5, where the packing of the column is distinctly seen by aid of an ordinary flashlight. Because of the greatly improved thermal insulation it is easier to retain liquefied gas in the distilling bulb and in the column without undue boiling and flooding and in the case of gas analyses a much greater quantity of gas can be passed through the column per unit of time with adequate cooling and scrubbing of the hydrocarbons to be retained in the column. As the silvered column is almost perfectly adiabatic, the fractionation achieved by it is considerably improved over a nonsilvered column, as shown by the remarkable separation in the fractional distillation curves, Figures 2, 3 and 4. In addition to decreasing the time of analysis it has been found that the silvered columns saved from 25 to 50 per cent in liquid air consumption over columns with nonsilvered vacuum jackets. On the average a liter of liquid air is needed per analysis.

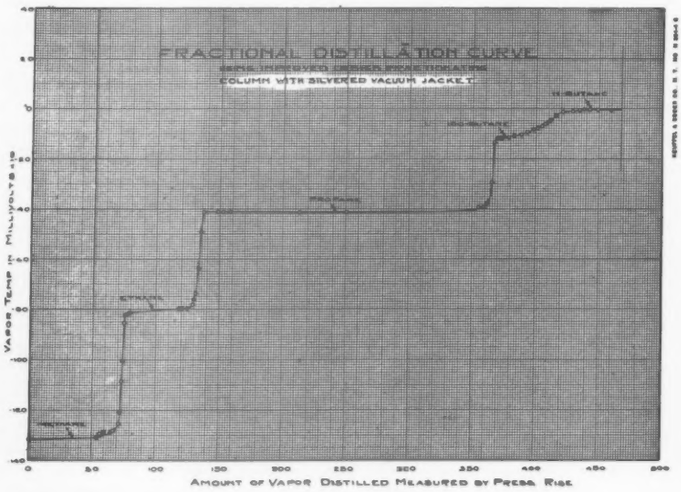
FRACTIONAL DISTILLATION CURVE
COLUMN WITH SILVERED VACUUM JACKET
Vapor Temp in Millivolts
Amount of Vapor Distilled Measured by Press Rise

Figure 4—Fractional distillation curve obtained with improved apparatus.

Analysis of Very Dry Gases

It is said that 2,500 to 3,000 c.c. by gaseous volume is sufficient as sample for gas analysis. While this size of sample provides accuracy within a few tenths of 1 per cent for componements present in more than 1 or 2 per cent it is far too small for the determination of as low as 0.1 per cent or even 0.05 per cent of pentanes and heavier in the residue gases from efficient gasoline plants. It must be realized that 0.1 per cent represents only 3 c.c. of pentanes and heavier vapor in a sample of 3,000 c.c., which is too small for fractionation even though the distillation pressure be reduced to below 20 m.m. of mercury to minimize the amount of material in the vapor space of the column and to improve the separation.

Residue gas analysis is, however, very important as it determines the loss of gasoline components from a gasoline plant. The efficiency of modern natural gasoline plants is such that even 0.2 per cent pentanes and heavier in the residue gas may not be permissible. To obtain such sensitivity and accuracy the only alternative, aside from conducting the distillation at extremely low pressures is to increase the size of the gas sample and to modify the analytical procedure accordingly.

Since it is usually just as easy to procure a 5-gallon or larger gas sample as a 1-gallon sample this alternative is entirely practical and makes it possible to determine even extremely low pentanes and heavier percentages. As much as 110,000 c.c. of gas or about 3.1 cubic feet of dry natural gas have been passed through the fractionating column and analyzed, of which amount 0.1 per cent is now 110 c.c. of gasoline vapor which is entirely adequate for accurate fractionation and measurement.

It is possible in this manner to run through the column ad libitum large samples of water-gas, cracked gas, etc., of which only a very small percentage is liquefiable even at liquid air temperatures and to analyze with desired precision the heavier hydrocarbons or other compounds present thus concentrated. To avoid filling the distilling bulb of the column with condensate most of the methane and lighter gases may be distilled from the top of the column while the gas sample is being entered and only ethanes and heavier with a small amount of methane condensed.

It should be stated here that the procedure outlined is an added possibility of the apparatus and not a requirement for extraordinarily large gas sample. The distillation may for special purposes be conducted at pressures comparable to those used in the familiar Shepherd and Porter apparatus with the same size gas sample but with much greater precision due to the use of a fractionating column. However, when a large gas sample is obtainable, as it usually is, it is preferable for most purposes to run enough gas through the apparaus to concentrate the trace of gasoline vapor which remains at the tail-end of the distillation of a very dry natural gas. Incidentally, after the fractionating column is once "primed" with reflux it is possible to so conduct the distillation that all the propanes and heavier but only a small part of the ethane present in a gas sample may be retained in the column while the rest of the gas is distilled during entry of sample.

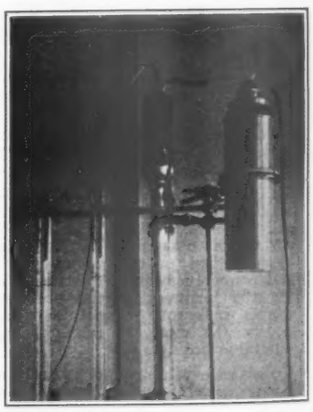

Figure 7—Connections to cooling vessel.

Cooling Vessels

An important change has been made in the design of the copper cooling vessel

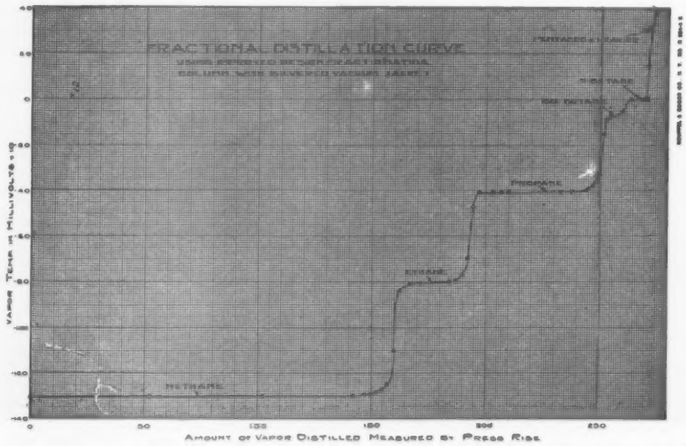

Figure 5—Fractional distillation curve obtained with improved apparatus.

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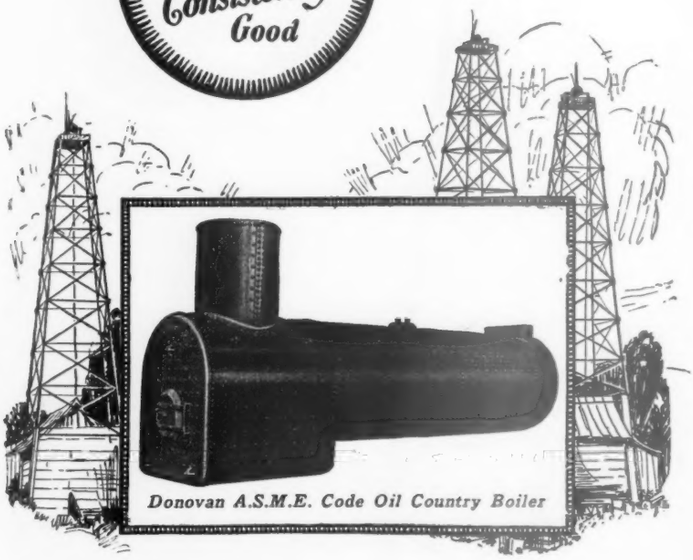

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NONE BETTER

immersed in the reflux cooling bath of the column into which liquid air or an equivalent refrigerating agent is blown to lower the temperature of the bath. In one design of a cooling vessel there is a possibility of liquid air or liquid oxygen overflowing the vessel and mixing with the gasoline bath. While the probability of the resulting gasoline-liquid air (or liquid oxygen) mixture reacting is very small, yet when it does occur it is of the nature of a detonating explosion and not pleasant to contemplate.

The cooling vessel was therefore redesigned as shown in Figure 6 so that liquid air or liquid oxygen cannot possibly come in contact with the gasoline bath. A vent tube is provided for the vaporized liquid air or for its overflow and is bent around and out of the reflux cooling chamber of the column. The cooling vessel itself should be made very substantial and tested for leaks under pressure. There is no danger in the use of liquid air or liquid oxygen in such a container and not a single accident has occurred in many hundreds of analyses.

Stirring Not Necessary

The fascinating contraption of an oscillating mercury column device originally devised by Dr. Victor Hunn, a graduate of the University of Michigan, has been eliminated without any disadvantage and with a gain in simplicity and freedom from adjustments and repairs. The cooling vessel into which liquid air is blown is shaped to fit almost completely around the delivery tube from the reflux chamber and the thermocouple junction is placed low enough in the delivery tube so its surroundings are always colder than the fractionated vapor coming in contact with it. The cooling vessel is made ample in cooling area and liquid air capacity. No stirring at all is necessary and the rate of cooling the reflux bath is sufficiently rapid.

Portability of Improved Apparatus

As mentioned in the above discussion and as shown in the illustrative photographs the separate distilling bulb, the oscillating mercury column and the fragile side tube on the column delivery tube have been eliminated as well as other parts of the apparatus. The framework of the apparatus was made more compact and the manifolds and manometers mounted in a flexible yet secure fashion as shown. As a result of these various changes the apparatus is compact and rugged enough so that it may be moved from room to room or even packed and shipped in the ordinary way if the fractionating columns are disconnected. It can be assembled either as a single unit or as two units on one framework.

Simultaneous Operation

With the simplified apparatus it is possible for one operator to run two analyses simultaneously although if one or both of these happen to be gas analyses, he is not at liberty to leave until the analyses are finished; otherwise the liquefied gas may warm up during his temporary absence to cause sufficient pressure to blow the mercury from the open-arm manometers of the apparatus. This difficulty is not present when two liquid analyses are run simultaneously or when two operators run three analyses simultaneously.

For convenience, when a large number of analyses is to be run, two units of the apparatus may be mounted on the same framework as shown in Figure 7. The fractionating columns may be designed either for gasoline analysis, for gas analysis or adaptable to either the only essential change being in the size of the distilling bulb of the column.

The improved apparatus described has been fully tested in the laboratories of many natural gasoline companies and the writer wishes to express his full appreciation of the co-operation extended him by these companies in adapting the apparatus to practical and intensive use in industrial laboratories.

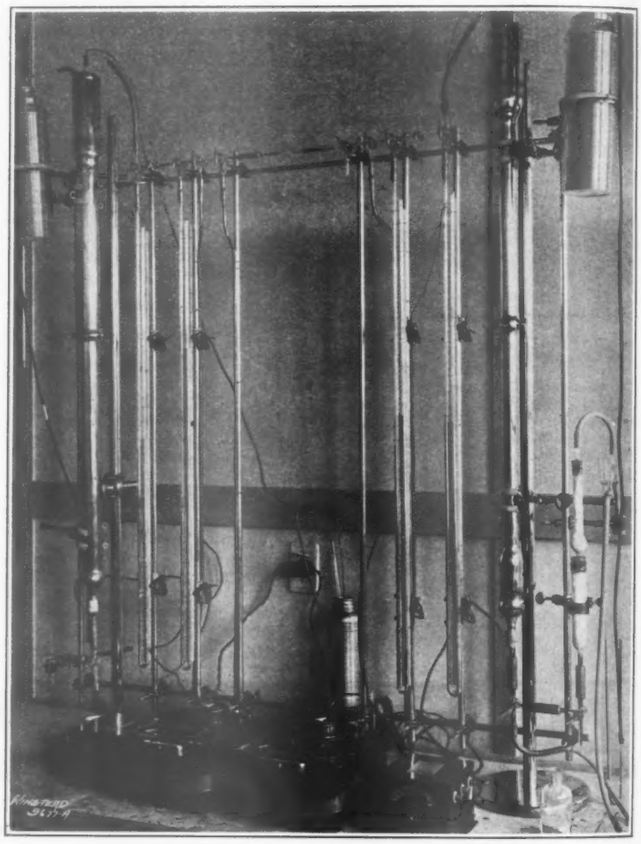

Figure 8—Double-unit fractionating apparatus at the laboratory of the Richfield-Pan American Oil Company at Signal Hill, Calif.

DEATH OF R. L. YOUNG

R. L. Young, independent oil operator of Houston, Tex., and discoverer of what is known as Young's Dome in Waller County, died at his home in Houston last week from the effects of influenza.

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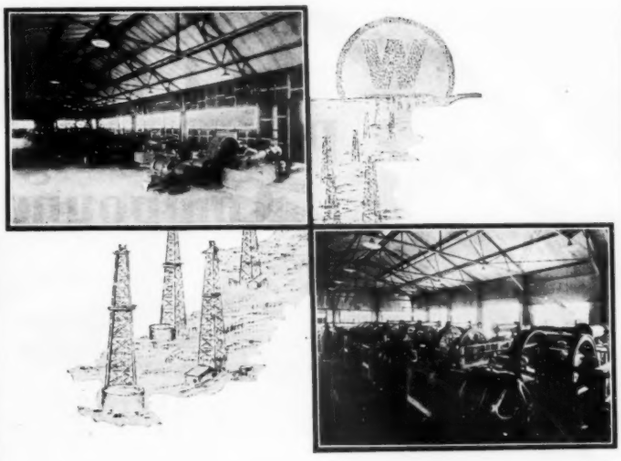

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STATISTICS OF IMPORTANT FIELDS, NOVEMBER, 1928

By G. R. Hopkins, United States Bureau of Mines

The month of November was, in general, one of declining output in the important flush fields east of California. Seminole continued to decline as the number of completions was less than half the October total. The St. Louis area registered a small increase but, as the month closed, gave every indication of being near its peak. Production in the West Texas district continued its slow decline and for the month averaged 331,000 bbls. as compared with 350,000 bbls. for October. In California the situation was somewhat different. A number of fields in that State, including Long Beach, showed increased daily output in November, but the major portion of the interest was centered on the new deep zones at Santa Fe Springs. Although only six wells were completed in that field in November, the daily average output rose to 55,000 bbls. from 36,000 bbls. in October.

The general decline in the Seminole-Pottawatomie County area occasioned a brisk demand for high gravity crude. This was reflected in a decrease in stocks held in Seminole Field of from 17,885,000 bbls. on November 1 to 17,464,000 bbls. on November 30.

PRODUCTION AND GRAVITY
(Barrels of 42 U. S. gallons.)

	Nov., 1928 Total	Nov., 1928 Daily av.	Oct., 1928 Total	Oct., 1928 Daily av.	Nov., 1927 Total	Nov., 1927 Daily av.	Average gravity
Seminole	9,024,000	301,000	10,170,000	328,000	12,754,000	425,000	39.0
St. Louis-Pearson	3,929,000	131,000	3,885,000	125,000	.....	.....	40.0
West Texas	9,929,000	331,000	10,861,000	350,000	6,548,000	218,000	30.0
Long Beach	5,870,000	196,000	5,987,000	193,000	3,012,000	100,000	26.0
Santa Fe Springs	1,641,000	55,000	1,115,000	36,000	1,163,000	39,000	33.0

STOCKS AT SEMINOLE
(Barrels of 42 U. S. gallons.)

	Nov., 1928	Oct., 1928	Nov., 1927
Producers' stocks	.....	436,000	479,000
Tank farm stocks	17,025,000	17,449,000	14,211,000
Total stocks	17,464,000	17,885,000	14,690,000

RECORD OF WELLS, NOVEMBER, 1928

	Completions: Oil	Gas	Dry	Total initial prod. (bbls.)	Average initial prod. (bbls.)	Drilling Nov. 30
Seminole	34	...	14	20,900	600	154
St. Louis-Pearson*	49	...	3	40,900	800	150
West Texas	93	1	31	239,700	2,600	345
Long Beach	28	...	...	22,400	800	142
Santa Fe Springs	6	...	...	25,700	4,300	217

*Represents wells in Pottawatomie County as reported by The Oil and Gas Journal.

ANALYSIS OF SUPPLY AND DEMAND OF ALL OILS
(Including wax, coke, and asphalt in thousands of barrels of 42 U. S. gallons.)

	November, 1928	October, 1928	November, 1927	Jan.-Nov., 1928	Jan.-Nov., 1927
NEW SUPPLY:					
Domestic production:					
Crude petroleum:					
Light	67,729	71,876	65,884	734,757	722,367
Heavy	8,032	7,786	8,609	85,613	103,811
Total crude	75,761	79,662	74,493	820,370	826,178
Natural gasoline	3,764	3,695	3,393	38,073	35,224
Benzol	241	245	205	2,557	2,350
Total production	79,766	83,602	78,091	861,000	863,752
Daily average	2,659	2,697	2,603	2,570	2,586
Imports:					
Crude	6,908	6,703	5,339	72,776	52,173
Refined	728	771	1,159	10,794	13,597
Total new supply all oils	87,402	91,076	84,589	944,570	928,522
Daily average	2,913	2,938	2,820	2,820	2,780
Change in stocks all oils	1,713	226	7,110	22,523	64,637
DEMAND:					
Total demand	85,689	90,850	77,479	922,047	863,885
Daily average	2,856	2,931	2,583	2,752	2,586
Exports:*					
Crude	1,691	2,016	1,280	17,444	14,126
Refined	11,298	10,270	10,525	127,013	115,825
Domestic demand	72,700	78,564	65,674	777,590	733,934
Daily average	2,423	2,534	2,189	2,321	2,197
Excess of daily average domestic production over domestic demand	236	163	414	249	389
STOCKS (end of month):					
Crude petroleum:					
East of California:†					
Light	319,020	319,279	301,325	319,020	301,325
Heavy	48,121	48,752	49,162	48,121	49,162
California:					
Light	16,524	16,670	21,273	16,524	21,273
Heavy‡	98,529	97,097	93,880	98,529	93,880
Total crude	482,194	481,798	465,640	482,194	465,640
Natural gasoline at plants	404	402	820	404	820
Refined products	126,514	125,199	119,313	126,514	119,313
Grand total stocks all oils	609,112	607,399	585,773	609,112	585,773
Days' supply§	213	207	227	221	237
Bunker oil (included above in domestic demand)	4,235	4,558	4,110	46,889	45,787

*Includes shipments to noncontiguous territories. †Exclusive of producers' stocks. ‡Includes fuel oil. §Grand total stocks divided by daily average total demand.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)
(From Bureau of Foreign and Domestic Commerce)

	Nov., 1928 Total	Nov., 1928 Dy. av.	Oct., 1928 Total	Oct., 1928 Dy. av.	Jan.-Nov., 1928	Jan.-Nov., 1927†
Imports	6,908,000	230,300	6,703,000	216,200	72,776,000	52,173,000
From Mexico	1,960,000	65,300	1,240,000	40,000	15,986,000	24,692,000
From Venezuela	3,954,000	131,800	4,227,000	136,300	42,885,000	18,049,000
From Colombia	324,000	10,800	759,000	24,500	10,611,000	6,887,000
From other countries	670,000	22,400	477,000	15,400	3,294,000	2,545,000
Exports:*	1,691,000	56,400	2,016,000	65,000	17,435,000	14,126,000
Domestic crude oil:						
To Canada	1,292,000	43,100	1,632,000	52,600	14,095,000	11,624,000
To other countries	399,000	13,300	384,000	12,400	3,339,000	2,502,000
Foreign crude oil	.....	.....	.....	.....	1,000	.....

*No crude shipments to territories. †Final figures.

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (Barrels)

	Nov., 1928 Total	Nov., 1928 Dy. av.	Oct., 1928 Total	Oct., 1928 Dy. av.	Jan.-Nov., 1928	Jan.-Nov., 1927*
Domestic petroleum by fields of origin:						
Appalachian	2,810,000	93,700	2,946,000	95,000	29,914,000	28,230,000
Lima-Indiana	238,000	7,900	153,000	4,900	1,474,000	1,262,000
Michigan	88,000	2,900	73,000	2,400	524,000	403,000
Illinois and S. W. Indiana	797,000	26,600	708,000	22,800	7,729,000	6,702,000
Mid-Continent	46,836,000	1,561,200	47,932,000	1,546,200	487,131,000	438,253,000
Gulf Coast	4,129,000	137,600	3,503,000	113,000	41,191,000	49,926,000
Rocky Mountain	2,609,000	87,000	2,878,000	92,900	28,247,000	28,908,000
Deliveries and exports	57,507,000	1,916,000	58,193,000	1,877,200	596,260,000	543,682,000
Deliveries	56,326,000	1,877,500	56,613,000	1,826,200	584,091,000	534,294,000
Foreign petroleum	6,873,000	229,100	6,693,000	215,900	72,617,000	52,508,000
Deliveries of domestic and foreign petroleum	63,199,000	2,106,600	63,306,000	2,042,100	656,708,000	586,802,000

*Final figures.

NUMBER OF PRODUCING OIL WELLS COMPLETED*

November, 1928	1,144	January-November, 1928	11,439
October, 1928	1,224	January-November, 1927†	13,585

*For states east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute. †Final figures.

(Continued on Next Page)

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PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons)

	November, 1928		October, 1928		Jan.-Nov.,	Jan.-Nov.,
FIELD:	Total	Daily av.	Total	Daily av.	1928	1927*
Appalachian	2,549,000	85,000	2,753,000	88,800	28,417,000	28,024,000
Lima-Indiana	117,000	3,900	142,000	4,600	1,554,000	1,706,000
Michigan	88,000	2,900	73,000	2,400	524,000	406,000
Ill.-S. W. Ind.	594,000	19,800	644,000	20,800	6,819,000	7,123,000
Mid-Continent	46,387,000	1,546,300	50,094,000	1,615,900	504,251,000	500,868,000
Gulf Coast	3,778,000	125,900	3,957,000	127,600	41,671,000	47,885,000
Rocky Mountain	2,340,000	78,000	2,568,000	82,800	26,727,000	†27,975,000
California	19,908,000	663,600	19,431,000	626,800	210,407,000	212,191,000
Total U. S.	75,761,000	2,525,400	79,662,000	2,569,700	820,370,000	826,178,000
STATE:						
Arkansas	2,594,000	86,500	2,688,000	86,700	29,733,000	37,182,000
California	19,908,000	663,600	19,431,000	626,800	210,407,000	212,191,000
Colorado	217,000	7,200	228,000	7,400	2,514,000	2,611,000
Illinois	507,000	16,900	556,000	18,000	5,945,000	6,462,000
Indiana	93,000	3,100	96,000	3,100	958,000	778,000
Southwestern	87,000	2,900	88,000	2,800	874,000	696,000
Northeastern	6,000	200	8,000	300	84,000	118,000
Kansas	2,826,000	94,200	3,003,000	96,800	35,353,000	37,791,000
Kentucky	608,000	20,300	659,000	21,200	6,728,000	6,164,000
Louisiana	1,656,000	55,200	1,720,000	55,500	19,872,000	20,975,000
Gulf Coast	558,000	18,600	555,000	17,900	6,148,000	4,603,000
Rest of State	1,098,000	36,600	1,165,000	37,600	13,724,000	16,372,000
Michigan	88,000	2,900	73,000	2,400	524,000	406,000
Montana	304,000	10,100	289,000	9,300	3,579,000	4,715,000
New Mexico	90,000	3,000	90,000	2,900	852,000	1,144,000
New York	246,000	8,200	236,000	7,600	2,322,000	2,050,000
Ohio	531,000	17,700	602,000	19,400	6,495,000	7,024,000
Cent. & East	420,000	14,000	468,000	15,100	5,025,000	5,436,000
Northwestern	111,000	3,700	134,000	4,300	1,470,000	1,588,000
Oklahoma	21,993,000	733,100	23,926,000	771,800	226,704,000	255,293,000
Osage County	1,403,000	46,800	1,497,000	48,300	18,252,000	21,779,000
Rest of State	20,590,000	686,300	22,429,000	723,500	208,452,000	233,514,000
Pennsylvania	824,000	27,500	877,000	28,300	9,031,000	8,760,000
Tennessee	3,000	100	2,000	100	46,000	56,000
Texas	21,096,000	703,200	22,714,000	732,700	234,260,000	197,512,000
Gulf Coast	3,220,000	107,300	3,402,000	109,700	35,523,000	43,282,000
Rest of State	17,876,000	595,900	19,312,000	623,000	198,737,000	154,230,000
West Virginia	448,000	14,900	511,000	16,500	5,265,000	5,558,000
Wyoming	1,729,000	57,700	1,961,000	63,200	19,782,000	19,498,000
Salt Creek	1,070,000	35,700	1,219,000	39,300	13,993,000	13,172,000
Rest of State	659,000	22,000	742,000	23,900	6,689,000	6,326,000
CLASSIFICATION BY GRAVITY (approx.):						
Light crude	67,729,000	2,257,700	71,876,000	2,318,600	734,757,000	722,367,000
Heavy crude	8,032,000	267,700	7,786,000	251,100	85,613,000	103,811,000

*Final figures. †Including Alaska.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (Barrels)

	November, 1928	October, 1928	Jan.-Nov., 1928	Jan.-Nov., 1927*
Crude oil	147,000	.....	2,300,000	9,806,000
Refined products	1,648,000	2,100,000	18,613,000	21,704,000
Gasoline	1,288,000	1,601,000	14,892,000	10,741,000
Tops	.....	80,000	263,000	.....
Gas oil	283,000	283,000	2,254,000	3,655,000
Fuel oil	2,000	128,000	845,000	6,938,000
Lubricants	73,000	4,000	333,000	354,000
Asphalt	2,000	4,000	26,000	16,000

*Final figures.

GASOLINE PRODUCTION BY THE VARIOUS METHODS—NOVEMBER, 1928

(Barrels)

	Straight run	%	Cracked	%	Natural gasoline	%	Total
East Coast	2,255,000	49	1,994,000	44	301,000	7	4,550,000
Appalachian	899,000	65	395,000	29	77,000	6	1,371,000
Indiana, Illinois, etc.	2,717,000	53	2,193,000	43	223,000	4	5,133,000
Oklahoma, Kans., etc.	3,038,000	59	1,716,000	34	357,000	7	5,111,000
Texas	3,810,000	52	2,886,000	39	569,000	9	7,355,000
Louisiana and Arkansas	1,241,000	51	802,000	33	380,000	16	2,423,000
Rocky Mountain	708,000	51	563,000	40	128,000	9	1,399,000
California	3,933,000	67	837,000	14	*1,106,000	19	5,876,000
Total	18,601,000	56	11,386,000	34	3,231,000	10	33,218,000
Total Oct., 1928	19,512,000	57	11,532,000	34	3,275,000	9	34,319,000
Ttl. Jan.-Nov., '28	199,247,000	58	111,438,000	33	32,047,000	9	342,732,000
Gulf Coasts	3,512,000	46	3,218,000	43	821,000	11	7,551,000

*Includes natural gasoline run through pipe lines.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES NOVEMBER, 1928

	Crude oil		Unfinished	Natural	Ttl. input
Input—	Domestic	Foreign	oils rerun	gasoline	(bbls.)
East Coast	7,697,000	5,829,000	1,108,000	301,000	14,935,000
Appalachian	2,841,000	.....	130,000	77,000	3,048,000
Indiana, Illinois, etc.	8,632,000	.....	805,000	223,000	9,660,000
Oklahoma, Kansas, etc.	9,189,000	.....	306,000	357,000	9,852,000
Texas	16,185,000	129,000	948,000	659,000	17,921,000
Louisiana and Arkansas	6,059,000	670,000	19,000	380,000	7,128,000
Rocky Mountain	2,161,000	.....	566,000	128,000	2,855,000
California	17,708,000	.....	*573,000	†1,106,000	19,387,000
U. S. Total	70,472,000	6,628,000	4,455,000	3,231,000	84,786,000
Daily av., Nov., 1928	2,349,100	220,900	148,500	107,700	2,826,200
Daily av., Oct., 1928	2,329,300	238,500	151,300	105,700	2,824,800
Texas Gulf Coast	11,857,000	129,000	891,000	542,000	13,419,000
Louisiana Gulf Coast	3,992,000	670,000	2,000	279,000	4,943,000

Output—	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East Coast	4,550,000	640,000	7,535,000	860,000	18,939,000
Appalachian	1,371,000	306,000	638,000	409,000	8,231,000
Indiana, Illinois, etc.	5,133,000	493,000	2,853,000	316,000	6,568,000
Oklahoma, Kansas etc.	5,111,000	795,000	2,874,000	239,000	3,878,000
Texas	7,355,000	1,256,000	7,042,000	633,000	6,695,000
Louisiana and Arkansas	2,423,000	452,000	3,050,000	84,000	7,553,000
Rocky Mountain	1,399,000	131,000	506,000	50,000	4,801,000
California	5,876,000	835,000	11,323,000	157,000	.....
U. S. Total	33,218,000	4,908,000	35,721,000	2,748,000	56,665,000
Daily av., Nov. 1928	1,107,300	163,000	1,190,700	91,600	1,888,800
Daily av., Oct., 1928	1,107,100	167,300	1,193,900	96,100	1,759,500
Texas Gulf Coast	5,714,000	1,006,000	4,952,000	609,000	6,495,000
Louisiana Gulf Coast	1,837,000	405,000	1,744,000	80,000	7,553,000

Output (cont'd)—	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished products (bbls.)	Losses (bbls.)
East Coast	12,000	113,800	72,000	80,000	445,000
Appalachian	4,600	.....	26,000	80,000	162,000
Indiana, Illinois, etc.	38,700	33,100	198,000	150,000	116,000
Oklahoma, Kansas, etc.	24,900	1,300	56,000	172,000	440,000
Texas	28,800	16,700	6,000	687,000	700,000
Louisiana and Arkansas	12,100	35,500	162,000	546,000	133,000
Rocky Mountain	9,900	900	10,000	612,000	60,000
California	.....	45,400	208,000	*500,000	334,000
U. S. Total	131,000	246,700	738,000	2,822,000	2,390,000
Daily av., Nov., 1928	4,370	8,220	24,600	94,100	79,700
Daily av., Oct., 1928	4,020	10,350	28,000	63,300	85,200
Texas Gulf Coast	23,200	16,600	2,000	354,000	565,000
Louisiana Gulf Coast	12,000	33,300	148,000	412,000	51,000

Note—Wax, coke, and asphalt equivalent to 280.5 pounds per barrel and 5.17 and 5.52 bbls. per ton, respectively. *Includes 44,000 bbls. net tops produced. †Includes 117,000 bbls. run through pipe lines.

(Continued on Next Page)

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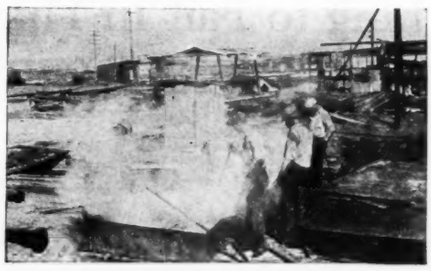

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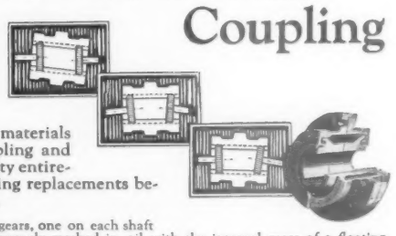

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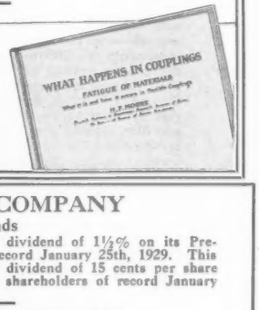

IMPERIAL ROYALTIES COMPANY
Preferred Share Dividends

Imperial Royalties Company will pay its usual monthly dividend of 1½% on its Preferred shares on January 30th, 1929, to shareholders of record January 25th, 1929. This is dividend No. 100. It will also pay its usual monthly dividend of 15 cents per share on its Class A Preferred shares on January 30, 1929, to shareholders of record January 25th, 1929.

IMPERIAL ROYALTIES COMPANY
Common Share Dividends

Imperial Royalties Company will pay a dividend of 1 cent per share on its Common shares on January 30th, 1929, to shareholders of record January 25th, 1929. It will also pay a dividend of 15 cents per share on its Class A Common shares on January 30th, 1929, to shareholders of record January 25th, 1929.

IMPERIAL ROYALTIES COMPANY
(Established April 15, 1920)
Kansas City, Missouri. Tulsa, Oklahoma.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES (Barrels)

	Nov. 30, 1928	Oct. 31, 1928	Nov. 30, 1927*
At refineries (and in coastwise transit thereto). Reported by location of storage:			
East Coast: Domestic	3,320,000	3,235,000	3,045,000
Foreign	3,488,000	3,710,000	3,986,000
Appalachian	2,235,000	2,181,000	1,822,000
Indiana, Illinois, etc.	2,982,000	2,931,000	3,092,000
Oklahoma, Kansas, etc.	5,849,000	5,329,000	4,324,000
Texas: Inland	1,885,000	1,712,000	1,656,000
Gulf Coast: Domestic	7,399,000	7,663,000	7,653,000
Foreign	179,000	158,000	304,000
Arkansas and inland Louisiana	1,098,000	936,000	457,000
Louisiana Gulf Coast: Domestic	3,954,000	4,220,000	6,104,000
Foreign	1,153,000	1,031,000	1,156,000
Rocky Mountain	2,017,000	1,774,000	1,394,000
Total east of California	40,559,000	39,830,000	39,081,000
Elsewhere than at refineries:			
Domestic—Reported by field of origin:			
Appalachian:			
New York, Pennsylvania, West Virginia, Eastern and Central Ohio: Gross	5,322,000	5,566,000	6,795,000
Net	5,027,000	5,263,000	6,459,000
Kentucky: Gross	961,000	986,000	1,216,000
Net	810,000	835,000	1,096,000
Lima-Indiana: Gross	1,397,000	1,517,000	1,363,000
Net	1,214,000	1,336,000	1,169,000
Illinois-Southwest Indiana: Gross	11,927,000	12,131,000	12,705,000
Net	11,260,000	11,463,000	12,159,000
Mid-Continent:			
Oklahoma; Kansas; Central, Panhandle, North and West Texas: Gross	250,346,000	250,447,000	230,466,000
Net	238,403,000	238,386,000	219,130,000
Northern Louisiana and Arkansas: Gross	28,271,000	28,937,000	28,021,000
Net	26,506,000	25,972,000	25,554,000
Gulf Coast: Gross	18,855,000	19,237,000	18,653,000
Net	18,402,000	18,753,000	18,265,000
Rocky Mountain: Gross	25,750,000	26,027,000	27,288,000
Net	25,718,000	25,987,000	27,256,000
Total pipe-line and tank-farm stocks east of California: Gross	342,829,000	344,848,000	326,420,000
Net	326,340,000	327,994,000	311,132,000
Foreign crude petroleum on Atlantic Coast	67,000	52,000	41,000
Foreign crude petroleum on Gulf Coast	175,000	155,000	233,000
	242,000	207,000	274,000
Total refinery, pipe-line and tank-farm stocks of domestic and foreign crude petroleum east of California	367,141,000	368,031,000	350,487,000
Classification by gravity (approximate):			
East of California:			
Light crude (24 degrees and above)	319,020,000	319,279,000	301,325,000
Heavy crude (below 24 degrees)	48,121,000	48,752,000	49,162,000
California: Light	16,524,000	16,670,000	21,273,000
Heavy (including fuel)	98,529,000	97,097,000	93,880,000

*Final figures.

COMPARATIVE ANALYSES (Thousands of barrels of 42 U. S. gallons)

	Runs to stills Total	Runs to stills Dy.av.	Imports* Total	Imports* Dy.av.	Exports* Total	Exports* Dy.av.	Stocks end of period	Domestic demand Total	Domestic demand Dy.av.
Crude petroleum:									
November, 1928	77,100	2,570	6,908	230	1,691	56	†383,665	.....	....
October, 1928	79,603	2,568	6,703	216	2,016	65	†384,701	.....	....
Jan.-Nov., 1928	830,684	2,480	72,776	217	17,444	52	†383,665	.....	....
November, 1927	69,988	2,333	5,339	178	1,280	43	†371,760	.....	....
Jan.-Nov., 1927	757,564	2,268	52,173	156	14,126	42	†371,760	.....	....
	Production Total	Production Dy.av.							
Gasoline:									
November, 1928	33,218	1,107	304	10	4,678	156	29,075	26,222	874
October, 1928	34,319	1,107	388	13	4,049	131	26,453	30,610	987
Jan.-Nov., 1928	342,732	1,023	3,876	12	49,995	149	29,075	299,876	895
November, 1927	28,606	954	417	14	3,686	123	30,410	24,478	816
Jan.-Nov., 1927	301,816	904	4,720	14	41,183	123	30,410	273,966	820
Kerosene:									
November, 1928	4,908	164	.....	....	2,091	70	8,884	2,547	85
October, 1928	5,186	167	55	2	1,755	57	8,614	3,465	112
Jan.-Nov., 1928	55,186	165	184	1	20,825	62	8,884	33,376	100
November, 1927	4,824	161	27	1	1,821	61	7,937	2,704	90
Jan.-Nov. 1927	51,244	153	40	....	18,283	55	7,937	33,639	101
Gas oil and fuel oil:									
November, 1928	35,721	1,191	411	14	3,320	111	‡136,503	.....	....
October, 1928	37,011	1,194	320	10	3,356	108	‡136,723	.....	....
Jan.-Nov., 1928	386,509	1,154	6,161	18	41,208	123	‡136,503	.....	....
November, 1927	32,946	1,098	704	23	3,935	131	‡127,517	.....	....
Jan.-Nov., 1927	359,202	1,075	7,673	23	43,563	130	‡127,517	.....	....
Lubricants:									
November, 1928	2,748	92	1	....	895	30	7,921	1,763	59
October, 1928	2,979	96	1	....	769	25	7,830	2,145	69
Jan.-Nov., 1928	31,695	95	10	....	10,177	30	7,921	21,467	64
November, 1927	2,477	83	.....	....	798	27	7,524	1,739	58
Jan.-Nov., 1927	28,920	87	7	....	8,992	27	7,524	19,987	60
Wax (thousands of pounds):									
November, 1928	56,665	1,889	2,994	100	25,170	839	103,949	22,329	744
October, 1928	54,546	1,760	1,920	62	26,281	848	91,789	22,736	733
Jan.-Nov., 1928	575,864	1,719	22,610	67	365,020	1,090	103,949	280,143	836
November, 1927	48,146	1,605	3,132	104	32,566	1,086	171,700	17,379	579
Jan.-Nov., 1927	530,308	1,588	18,556	56	309,754	927	171,700	252,741	757

*From Bureau of Foreign and Domestic Commerce, subject to revision. Exports include shipments to Alaska, Hawaii and Porto Rico. †Includes California light crude. ‡Includes California heavy crude and fuel oil.

STOCKS HELD BY THE REFINING COMPANIES IN THE UNITED STATES, NOVEMBER 30, 1928

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)
East Coast	4,730,000	1,499,000	6,666,000	2,729,000
Appalachian	936,000	290,000	1,218,000	1,233,000
Indiana, Illinois, etc.	4,220,000	1,366,000	3,581,000	750,000
Oklahoma, Kansas, etc.	2,657,000	708,000	6,450,000	450,000
Texas	4,548,000	1,514,000	12,608,000	1,650,000
Louisiana and Arkansas	1,884,000	1,005,000	6,174,000	103,000
Rocky Mountain	1,169,000	291,000	1,277,000	158,000
California	8,931,000	2,211,000	.....	849,000
U. S. Total	29,075,000	8,884,000	*37,974,000	7,921,000
U. S. Total Oct. 31, 1928	26,453,000	8,614,000	*39,626,000	7,830,000
Texas Gulf Coast	3,780,000	1,397,000	9,825,000	1,577,000
Louisiana Gulf Coast	1,721,000	985,000	5,167,000	101,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished oils (bbls.)
East Coast	38,151,000	27,300	93,700	54,000	7,559,000
Appalachian	13,521,000	3,600	400	62,000	1,342,000
Indiana, Illinois, etc.	18,961,000	68,900	36,300	181,000	3,559,000
Oklahoma, Kansas, etc.	5,196,000	66,100	1,700	108,000	2,448,000
Texas	4,564,000	119,500	7,200	16,000	10,761,000
Louisiana and Arkansas	10,076,000	61,600	30,200	88,000	2,388,000
Rocky Mountain	14,380,000	71,800	8,300	66,000	1,264,000
California	.....	.....	50,000	155,000	†8,515,000
U. S. Total	103,949,000	418,800	227,800	730,000	38,137,000
U. S. Total Oct. 31, '28	91,789,000	394,400	211,300	726,000	38,456,000
Texas Gulf Coast	4,404,000	105,000	7,100	7,000	9,282,000
Louisiana Gulf Coast	10,076,000	61,300	30,100	81,000	2,036,000

*East of California. †Includes 1,109,000 bbls. tops in storage.

The indicated output of motor fuel from the above and other sources may be expressed by the following table. (Thousands of gallons.)

(Continued on Next Page)

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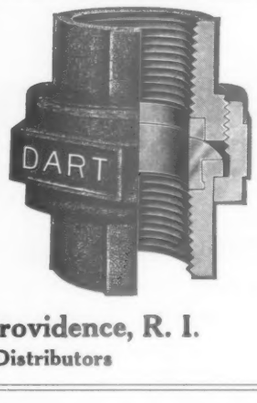

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PRECISION IN CRANE PIPING MATERIALS LOWERS INSTALLATION COST

CRANE

QUALITY REDUCES REPAIR AND REPLACEMENT CHARGES

	Nov., 1928	Oct., 1928	Jan.-Nov., 1928	Nov., 1927
Gasoline produced at refineries*, †	1,395,200	1,441,400	14,394,900	1,199,400
Natural gasoline blended at plants east of Calif.	2,400	2,100	26,600	2,700
Natural gasoline sold direct to jobbers	2,100	2,100	23,100	600
Benzol production‡	10,100	10,300	107,400	8,600
Total motor fuel produced	1,409,800	1,455,900	14,552,000	1,211,500
Daily average	46,990	46,960	43,440	40,300
*Includes nat. gasoline blended at refineries	130,800	132,000	1,271,600	114,500
†Includes natural gasoline run through refinery pipe lines in California	4,900	5,600	74,500	8,800

‡Estimated with production of by-product coke as a basis.
Prepared under supervision of G. R. Hopkins, Petroleum Economics Division, E. B. Swanson, acting chief economist.

GULF COAST STORAGE DECLINED IN NOVEMBER

HOUSTON, Tex., Jan. 12.—Crude stocks in Gulf Coast storage December 1 totaled 22,811,446 bbls. according to figures just compiled here. This was a decrease of 1,393,973 bbls. from figures of November 1. Stocks in Southwest Texas fields December 1 totaled 2,445,051 bbls. Detailed figures are:

GULF COAST FIELDS

Texas

	Steel storage
Batson	2,225
Barbers Hill	1,000
Big Creek	31,579
Boling	32,171
Damon Mound	24,650
Dayton	1,000
Goose Creek	180,740
Hull	275,658
Humble	1,523,554
Liberty	30,720
Markham	42,100
Orange	125,565
Pierce Junction	125,000
Raccoon Bend	30,000
Saratoga	29,124
Spindletop	7,145,212
Sour Lake	1,429,598
West Columbia	1,202,573
Total	12,232,469
	Earthen storage
Goose Creek	105,490
Humble	380,782
Spindletop	175,000
Sour Lake	254,982
West Columbia	320,094
Total	1,236,348

Louisiana

	Steel
Evangeline	29,440
Edgerly	17,500
Vinton	155,200
Lockport	647,595
Sorrento	1,000
Total	850,735

Coastal Refinery, Tank Farms, Terminals

	Steel
Englewood	1,097,844
Norsworthy	262,500
Pasadena	82,454
Sinco	476,750
Webster	1,836,732
Texas City	2,600,000
Lynchburg	92,280
Baytown	1,850,018
Crosby	143,213
Almeda	50,103
Total	8,491,894
Total steel storage Dec. 1	21,575,098
Total steel storage Nov. 1	22,551,529
Difference	976,431
Total earthen Dec. 1	1,236,348
Total earthen Nov. 1	1,653,790
Decrease	417,442

Southwest Texas

	Steel
Luling	555,000
Lockhart	20,500
Laredo	1,869,551
Total Dec. 1	2,445,051
Total Nov. 1	2,392,123
Increase	52,928

VENEZUELAN OUTPUT INCREASING RAPIDLY

WASHINGTON, D. C., Jan. 12.—Venezuelan production and exportation of crude oil is shown to be rapidly increasing by a reliable report received here. One of the leading oil companies operating in Venezuela gathered this information for its own use and it showed that the October production of crude oil total 10,613,742 bbls. This was an increase of 1,183,000 bbls. over September.

The October exports of crude oil from Venezuela by the three producing companies were as follows: Dutch-Shell interests, 4,396,098 bbls.; Lago Petroleum Co., 2,596,000 bbls., and the Venezuela Gulf Oil Co., 2,395,395 bbls. This was an increase of 983,904 bbls. over the September production of 8,403,900 bbls. The indications are that the November and December production figures will show a still further increase over the present production, it is stated by the same authority.

LEADERS OF INDUSTRY ON 1929 OIL OUTLOOK

By W. M. Irish
President, Atlantic Refining Co.

"Oil industry profits, during 1928, generally were below a 14-year average and unevenly distributed over the several major operations of integrated companies. Throughout the year profits have been progressively recovering from the effects of price depression over the period January, 1927, to August, 1928. Such recovery occurred in spite of constant threat of potential excess production, which threat is possibly more ominous now than earlier in the year.

"If the anticipated 9 per cent overall increase in demands for product is realized during 1929, and permitted to reduce the potential production, while utilizing a greater portion of the industry's oversized refining and marketing facilities, next year's profits, on the average, should be better than the corresponding experience for the full year of 1928. The events to be dreaded are too much crude oil and too much new capital."

By Earl W. Sinclair
President, Sinclair Consolidated Oil Corp.

"The forecast for 1929 would indicate an increase in automotive vehicles, airplanes and motor boats that will call for a greater supply of gasoline. The use of heavier oils as fuels for steam-driven and Diesel engine-driven forms of marine transportation is increasing yearly. This will undoubtedly bring about an increased demand for petroleum products in 1929 possibly in excess of the increase in 1928, which will not be less than 4,000,000 gallons of gasoline a day and 200,000 bbls. of crude oil a day."

By R. G. Stewart
President, Pan American Petroleum & Transport Co.

"Mexican production has been diminished, first, by the insecurity of titles under new legislation (now, fortunately, on the way to correction), and, second, by survival of taxes and charges, supported only when production of individual wells was greater and before competition of similar oils on the Caribbean and Gulf of Mexico had developed. We are confident the logic of the situation will convince the new government of Mexico that equalization of taxes and charges with those of competitive districts is just and appropriate. When such changes are made, the producers can afford to, and will, resume development and production."

By J. Edgar Pew
President, Twin State Oil Co.

"Oil prospects for the Mid-Continent Field, both in prices and production, are encouraging for 1929.

"The opinion of southwest oil men is that the crude market has maintained a relatively level trend throughout the year, considering the amount of oil marketed during the period

"Price prospects for 1929 are encouraging because operators have shown unmistakable signs of starting drilling operations only when a new source of output is needed."

REPORT CONCESSION IN PERU

NEW YORK, Jan. 12.—According to reports from Lima, Peru, Bertram Lee, of the Benedum-Trees Oil Co. of Pittsburgh, Pa., has acquired a 12,500,000-acre concession in the Peruvian Andes, and is now on the ground to supervise development of the project. He is accompanied by W. R. Davis and a group of New York and Boston bankers.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Gray County

Danciger Oil & Refining Co.'s No. 1 B. Sheridan, 330 feet north and west of the SE cor. of the SE of Section 184, Block B-2, H.&G.N. Survey. Empire Gas & Fuel Co.'s No. 1 A. R. Clay, 330 feet south and west of the NE cor. of Section 185, Block B-2, H.&G.N. Survey.

Hutchinson County

Phillips Petroleum Co.'s No. 6 Johnson Brothers-Barnum, 1,650 feet north and 330 feet west of the SE cor. of the E half of the south 160 acres of the north 400 acres of Section 64, Block 46, H.& T.C. Survey. Gulf Production Co.'s No. 3 J. M. Sanford, 330 feet north and east of the SW cor. of the N half of Section 78, Block 46, H.&T.C. Survey.

Wheeler County

Clark and others' No. 1 I. Close, 300 feet south and 660 feet west of the NE cor. of the S half of the SE of the NE of Section 82, Block 23, H.&G.N. Survey. Lone Star Gas Co.'s No. 3 T. C. Jones, C of the NW of the NE of Section 1, Block 24, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Reno Oil Co.'s No. 6 Mrs. J. E. Parrish-A, 1,200 feet north and 150 feet east of the SW cor. of their 40-acre lease out of Section 2, S.P.R.R. Survey, A-1,004. G. R. Ridgeway's No. 2 G. H. Plowman and others-B, 800 feet south and 200 feet west of the NE cor. of Lot 67, Miller-Dycus Subdivision, H. Corzine Survey, A-56. J. Turner and others' No. 4 J. D. Lyles, 150 feet north and west of the SE cor. of the NE of the NW of Section 7, Hooper & Wade Subdivision, A-234. L. T. Burns' No. 1 Mrs. Hattie E. Porter, 150 feet north and west of the SE cor. of the north 80 acres of the east 160 acres of the A. Balle Survey, A-25. H. Donohoe and others' No. 3 W. L. Andrews, 150 feet south and east of the NW cor. of the south 80 acres of the E half of Section 1,826, T.E.&L. Survey. A. Minnick's No. 2 S. Wilson, 2,350 feet south and 2,200 feet east of the NW cor. of Section 2, S.P.R.R. Survey, A-859. Perkins & Cullum's No. 1 Mrs. G. Williams, 150 feet north and 1,350 feet west of the SE cor. of the north 40 acres of the south 80 acres of the John I. Hand Survey, A-182.

Brown County

Milham Corp.'s No. 9 W. W. Rosser, 150 feet south and east of the northwest corner of their lease out of the W. Q. Cross Survey, A-1,028. Phillips Petroleum Co.'s No. 18 Roy Hickman, 1,489 feet south and 744 feet west of the northeast corner of their lease out of the Thomas Benson Survey No. 783. Young Brothers, Alexander & Woodley Petroleum Co.'s No. 18 Roy Hickman, 406 feet north and 1,237 feet east of the southwest corner of their 80-acre lease out of the Thomas Benson Survey No. 783.

James H. Green's No. 2 W. L. Hill, 150 feet south and 450 feet east of the northwest corner of the W. L. Hill 79-acre tract out of the S. P. Walker Survey, A-992. Indian Petroleum Co.'s No. 1 B. S. Boysen, 530 feet northwest of the southeast line and 10 feet southwest of the northeast line of the Prosper Mangle Survey No. 604. George W. McClung's No. 1 Brooks Smith, 1,250 feet southeast of the northwest line and 150 feet southwest of the northeast line of the Brooks Smith 150-acre tract out of the J. S. Thom Survey No. 53, (shown as Brooks Smith Realty Co.). Spinney and others' No. 1 W. D. McCulley, 200 feet southeast of the northwest line and 200 feet northeast of the southwest line of the northeast 30 acres of the W. D. McCulley 200-acre tract out of the J. S. Thom Survey No. 53.

Coleman County

W. P. Head's No. 1 A. O. Gray, 150 feet north and west of the southeast corner of the north 60 acres of the east 125 acres of the Prosper Hope Survey No. 169. Continental Oil Co. and others' No. 11 M. T. Overall, 200 feet south and east of the SW cor. of the J. H. Barkly Survey No. 700, and located in Section 9, Block 1, G.H.&H. Survey. Continental Oil Co. and Atlantic Oil Producing Co. and others' No. 4 M. T. Overall, 200 feet north and east of the southwest corner of the J. H. Barkly Survey No. 700.

Cooke County

C. M. Beckner and others' No. 1 Mrs. Fred Grotts, 150 feet south and 570 feet west of the northeast corner of Mrs. Fred Grotts 301-acre tract out of the E.T.R.R. Survey, A-363, being 150 feet south and east of the northwest corner of their 10-acre lease (square). W. J. Green and others' No. 4 L. Campbell, 150 feet north and 450 feet west of the southeast corner of the west 112 acres of the L. Campbell tract out of the O. F. Leverett Survey, A-607.

Glasscock County

Group 1 Oil Co. and Marland Production Co.'s No. 7 W. R. Settles-A, 2,310 feet south and west of the NE cor. of Section 158, Block 29, W.&N.W.R.R. Survey. Same companies' No. 8 W. R. Settles-A, 2,310 feet north and east of the SW cor. of Section 158, Block 29, W.&N.W.R.R. Survey.

Grayson County

Simpson-Fell Oil Co.'s No. 3 G. W. Wall, 885 feet south and 518 feet west of the northeast corner of the James Ingram Survey, A-617.

Howard County

Laurel Oil & Gas Co. and Cosden & Co.'s No. 9 Dora Roberts, 1,650 feet north and 330 feet west of the SE cor. of Section 136, Block 29, W.&N.W.R.R. Survey. Marland Production Co.'s No. 2 Otis Chalk-C, 330 feet south and 1,650 feet west of the NE cor. of Section 140, Block 29, W.&N.W.R.R. Survey. Marland Production Co.'s No. 3 Otis Chalk-C, 660 feet south and 2,440 feet west of the NE cor. of Section 140, Block 29, W.&N.W.R.R. Survey. Same company's No. 6 H. R. Clay, 330 feet south and 990 feet west of the NE cor. of Section 155, Block 29, W.&N.W.R.R. Survey. Moody Oil Corp.'s No. 12 Dora Roberts-B, 330 feet south and 380 feet east of the NW cor. of Section 137, Block 29, W.&N.W.R.R. Survey. Pure Oil Co.'s No. 9 Otis Chalk, 990 feet north and west of the SE cor. of Section 125, Block 29, W.&N.W.R.R. Survey.

Montague County

Bridwell Oil Co.'s No. 9 Mrs. M. H. Salmon-A, 975 feet south and 1,325 feet east of the NW cor. of their 62-acre lease "A" out of the F. Robertson Survey, A-620.

Pecos County

Stein & McGee's No. 1 Louis Paterson, 150 feet southeast of the northwest line and 150 feet northeast of the southwest line of Section 34, Block 10, H.&G.N. Survey.

Wichita County

Bridwell & Mayfield's No. 4 T. A. Womack, 605 feet south and 150 feet west of the NE cor. of Section 2, G.C.&S.F. Survey, A-796. Coman Oil Co. and Prairie Oil & Gas Co.'s No. 3 M. P. Bishop, 1,365 feet north and 150 feet west of the southeast corner of the M. P. Bishop tract out of the L. Metherly Survey, A-240. Holbrook & Wood's No. 29 Kemp & Kempner, 1,050 feet south and 1,770 feet west of the northeast corner of Block 82, Kemp Wichita Valley Land. Humble Oil & Refining Co.'s No. 7 W. H. Taylor, 452 feet north and 150 feet west of the southeast corner of Block 81, Kemp Wichita Valley Land. Mrs. R. A. Lanning, Administratrix, No. 9 S. M. McCarty, Lease 3, 150 feet north and 700 feet west of the southeast corner of the east 40 acres of the north 100 acres of the S. M. McCarty 231.4-acre tract out of the Sam O. Fowler Survey, A-78. Magnolia Petroleum Co.'s No. 6 J. R. Pace, 150 feet north and east of the southwest corner of their 10-acre lease out of the R. J. Scott Survey, A-255. Seaboard Oil & Gas Co. and Prairie Oil & Gas Co.'s No. 3 J. F. Boyd, 150 feet south and east of the northwest corner of Lot 12, J. T. Lewis Survey, A-462. Staley & Wynne's No. 11 Kemp & Kemp-

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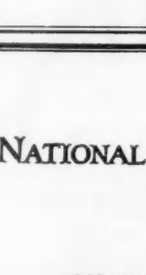

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ner, 450 feet south and 150 feet west of the southeast corner of Block 81, and located in Block 82, Kemp Wichita Valley Land.

Staley & Wynne's No. 12 Kemp & Kempner, 450 feet south and 1,750 feet west of the NE cor. of Block 82, Kemp Wichita Valley Land. United Producers Co.'s No. 8 W. L. Hodges-A, 450 feet south and 150 feet east of the NW cor. of Lot 9, W. L. Hodges Subdivision, Section 1, H.T.&B., A-139.

Wilbarger County

J. B. Baker and others' No. 1 W. T. Waggoner-D, 874 feet south and 4,106 feet west of the SW cor. of Section 5, Block 5, H.&T.C., and located in the Thomas D. Purnell Survey. Fain-McGaha Oil Corp.'s No. 2 W. T. Waggoner-AA, 150 feet south and east of the NW cor. of the NE of the SE of Section 18, Block 4, H.&T.C. E. B. Lawson's No. 15 W. T. Waggoner-B, C of the SW of the NE of Section 30, Block 4, H.&T.C. Lewis Production Co.'s No. 4 W. T. Waggoner, 150 feet north and 155 feet west of the SE cor. of the SW of the NE of Section 18, Block 4, H.&T.C. Lewis Production Co.'s No. 5 W. T. Waggoner, 150 feet south and 155 feet west of the NE cor. of the NW of the SE of Section 18, Block 4, H.&T.C. Lewis Production Co.'s No. 6 W. T. Waggoner, 150 feet north and 155 feet west of the SE cor. of the N half of the SW of the NE of Section 18, Block 4, H.&T.C. The Texas Company's No. 1 R. M. Harris, 250 feet north and 3,798 feet west of the SE cor. of Section 36, Block 16, H.&T.C.

Winkler County

Gulf Production Co.'s No. 2 Ida Hendrick, 1,330 feet north and 330 feet west of the SE cor. of the NW of Section 44, Block 26, School Land.

Young County

Dorian and others' No. 3 C. W. Johnson, 450 feet south and west of the NE cor. of Lot 12, Edw. W. Sergeant Survey, A-253. Fain-McGaha Oil Corp.'s No. 2 R. Campbell-F, 150 feet south and east of the NW cor. of Section 1,375, T.E.&L. Pennell and others' No. 1 W. E. Baker, 150 feet south and 700 feet east of the NW cor. of Section 1, G.B.&N. Co. Survey, A-1,852. Panhandle Refining Co. and others' No. 11 H. O. Prideaux-C, 150 feet north and 750 feet east of the SW cor. of their 108-acre "C" lease out of the A. Rohus Survey, A-240. Wichita Production Co.'s No. 1 W. R. Farmer-B, 450 feet north and 150 feet west of the SE cor. of the east 40 acres of the west 80 acres of the S half of the J. Anderson Survey, A-6. Wise & Jackson and others' No. 3 R. J. Calvin, 750 feet south and 1,150 feet east of the NW cor. of the R. J. Calvin 200-acre tract out of the A. Rohus Survey, A-240.

CORRECTED LOCATIONS
Week Ended January 2

In Archer County: H. Donohue's No. 2 W. L. Andrews, 450 feet north and 150 feet east of the SW cor. of the north 80 acres of the E half of Section 1,826, T.E.&L. H. Donohue and others' No. 2 W. L. Andrews, 150 feet north and east of the SW cor. of the north 80 acres of the E half of Section 1,826, T.E.&L.

In Grayson County: Simpson-Fell Co.'s No. 2 G. W. Wall, 886 feet south and 1,222 feet west of the NE cor. of the G. R. Reeves Survey, A-617. Same company's No. 1 G. W. Wall, 933 feet south and 1,700 feet west of the NE cor. of the G. R. Reeves Survey, A-1,015.

In Wilbarger County: Phillips Petroleum Co.'s No. 1 W. T. Waggoner-Wag, 195 feet south and west of the NE cor. of the SW of the NW of Section 18, Block 4, H.&T.C. E. B. Lawson's No. 1 W. T. Waggoner-D, 660 feet north and 200 feet east of the SW cor. of the NW of Section 29, Block 4, H.&T.C.

LEGAL

NOTICE OF SALE OF NAVAJO TRIBAL OIL AND GAS LEASE

On January 30, 1929, at ten o'clock a.m., at Shiprock, New Mexico, there will be offered for sale at Public Auction for a cash bonus in addition to royalty on production, an exploratory oil and gas mining lease covering a tract of approximately 1,440 acres, Townships 30 and 31, North, Range 17 West, on the Chimney Rock Structure, Navajo Indian Reservation, New Mexico. Full information may be obtained from B. P. Six, Superintendent of the Northern Navajo Agency, Shiprock, New Mexico.

MAY this New Year give you an overflowing fullness of Happiness and a generous share of the Prosperity that seems to be in store for oil men everywhere.

Thus, The Oil and Gas Journal greets you at a time when it is doing something definite to help you enjoy the Prosperity and Happiness that it hopes most sincerely you will have during the entire year.

"The 1928 Annual Review Number" which will be published THIS MONTH is one definite proof of The Oil and Gas Journal's desire to provide you with facts that you can use to make 1929 a real prosperous year.

The OIL and GAS JOURNAL
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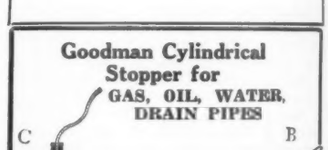

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TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

Detailed Operations in All Fields for Month of December

SUMMARY OF ALL OPERATIONS

Field—	Wells Completed Comp.	Prod.	Dry	Gas
Eastern	342	1,428	31	73
Central Ohio	126	759	32	56
Lima	16	107	7	1
Indiana	19	154	8	2
Illinois	14	98	8	0
Michigan	31	3,235	5	4
Kentucky	128	1,990	44	6
Tennessee	1	.....	..	1
Oklahoma	272	80,311	87	24
Kansas	46	3,125	22	4
Texas Panhandle	31	2,826	9	4
East Central Texas	9	3,342	6	0
West Texas	35	324,727	25	0
North Central Texas	322	14,642	145	13
Southwest Texas	88	7,856	47	15
East Texas	5	.....	2	3
Gulf Coast	129	43,517	55	1
North Louisiana	41	218	22	15
Arkansas	22	3,805	11	0
Wyoming	17	1,152	4	4
Montana	45	1,970	14	6
Colorado	11	253	7	0
Utah	2	.....	1	1
New Mexico	9	700	7	1
Total Dec.	1,811	496,215	599	234
Total Nov.	1,993	394,704	617	244
Difference	182	101,511	18	10

Field—	Rigs and Wells Drilling Rigs	Drlg.	Ttl.
Eastern	103	355	458
Central Ohio	72	161	233
Lima	2	24	26
Indiana	4	47	51
Illinois	3	11	14
Michigan	61	74	135
Kentucky	17	190	207
Tennessee	4	15	19
Mississippi	3	21	24
Alabama	0	6	6
Oklahoma	178	855	1,033
Kansas	74	245	319
Texas Panhandle	35	116	151
East Central Texas	1	17	18
West Texas	60	350	410
North Central Texas	97	420	517
Southwest Texas	34	184	218
East Texas	4	21	25
Gulf Coast	14	179	193
North Louisiana	19	78	97
Arkansas	33	141	174
Wyoming	22	117	139
Montana	12	77	89
Colorado	3	32	35
Utah	19	79	98
New Mexico			
Total Dec.	893	3,874	4,767
Total Nov.	944	3,878	4,822
Difference	51	4	55

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Creek	22	1,640	13	2
Carter	10	532	1	1
Grady	4	28	..	3
Kay	7	375	3	2
Muskogee	13	27	9	1
Okfuskee	10	2,035	3	..
Okmulgee	24	113	13	4
Osage	22	292	8	1
Pawnee	4	20	2	1
Pontotoc	13	4,152	3	2
Pottawatomie	54	41,700	3	..
Seminole	42	22,144	12	1
Stephens	17	1,532	3	..
Wagoner	5	10	2	2
Miscellaneous	25	5,711	12	4
Total Dec.	272	80,311	87	24
Total Nov.	281	68,049	87	27
Difference	9	12,262	..	3

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Carter	4	20	24
Creek	18	75	93
Grady	2	9	11
Grant	1	9	10
Hughes	..	12	12
Kay	1	17	18
Kiowa	2	18	20
Logan	3	23	26
Muskogee	4	32	36
Okfuskee	10	31	41
Okmulgee	10	28	38
Osage	9	38	47
Pawnee	1	9	10
Payne and Lincoln	5	14	19
Pontotoc	9	20	29
Pottawatomie	22	160	182
Seminole	47	213	260
Stephens	8	31	39
Tulsa	2	6	8
Wagoner	1	9	10
Miscellaneous	15	85	100
Total December	178	855	1,033
Total November	228	763	991
Difference	50	92	42

WELLS COMPLETED

CREEK COUNTY

17-17- 7 Tiger, C. H. Lebow 16..... 165
Tiger, Shaffer O. & R. 18..... 125
20-17- 7 Bullett, Houston Oil 2..... 240
23-18-11 Pahcohney, Dixie Drlg. Co. 2.. dry
Johnson, A. B. Ice et al 1..... dry
2-17-11 McComos, J. E. Wallace 1... gas
6-17-11 Glover, Sapulpa Fuel Co. 1.... dry
27-14-10 Morton, Sinclair O. & G. 1... dry
19-17- 9 Deer, F. R. Billingslea 1..... dry
32-17-11 Smith, T. Wheeler et al 1.... dry
11-17-12 Glenn, A. J. Spears 8..... dry
23-14-10 Scott, Atlantic O. P. Co. 2.... 30
13-15- 9 Wright, Madden & Madden et al 3..... 750
5-16- 8 Hammer, Prairie O. & G. 10..... 30
15-18-11 Snow, Kennedy & Horner 2... dry
3-17-10 McNac, The Texas Co. 1..... dry
29-15- 9 Carmen, C. G. Tibbens 1..... dry
26-18- 7 Jones, Shaffer O. & R. 2..... gas
1-14- 9 Polk, Shaffer O. & R. 1..... dry
35-16-10 Froe, Sunray Oil 1-A..... 300
9-18-12 White, C. G. Tibbens 10..... dry
2-18-11 Sherlil, A. A. Thornton et al 1-A..... dry
Wells completed 22
Production 1640
Dry 13
Gas 2
Gas production 12,000,000

CARTER COUNTY

11-2s-3w Lyles, Roxana Pet. 3..... 96
23-1s-3w Gill, Magnolia Pet. 1..... 96
26-1s-3w Jones, M. T. Smith et al 1.. dry
29-1s-3w Miller, Hall & Briscoe 4..... 50
30-1s-3w Denny, Magnolia Pet. 2..... 49
33-1s-3w Gillespie, Magnolia Pet. 1..... 48
Hefner, Magnolia Pet. 4..... 59
35-3s-2w Fish, H. L. Sturm 1..... 17
29-2s-3w Morris, Gypsy Oil 4..... gas
24-1s-3w Eaves, The Texas Co. 1..... 117
Wells completed 10
Production 532
Dry 1
Gas 1
Gas production 21,000,000

GRADY COUNTY

26-5-8w Farwell, Okla. Gas Utilities 14 gas
28-3-5w Harrison, Magnolia Pet. 1..... 28
2-4-8w Taylor, Okla. Gas Utilities 2.. gas
35-5-8w Smith, Magnolia Pet. 8..... gas
Wells completed 4
Production 28
Gas 3
Gas production 64,000,000

KAY COUNTY

19-29-1 Lambing, Carter Oil and Ona Oil 1..... 300
14-27-1 Meuret, D. J. Wilson 1..... gas
31-28-1 White, Nehr et al 2..... dry
14-27-1 Booley, Ingram & Wilson 2.. gas
35-25-1w Endicott, Slick & Comar 1-E 75
4-27-1w Case, Harold Pet. 2..... dry
18-29-1 Mefford, Shaffer O. & R. 1.. dry
Wells completed 7
Production 375
Dry 3
Gas 2
Gas production 5,000,000

MUSKOGEE COUNTY

21-15-19 Cordray, C. D. Bradley 1..... dry
3-14-18 Brady, Tidal Oil Co. 1..... dry
32-14-19 Henson, A. Wasaff 3..... dry
8-15-15 Barnett, Bryan & Emery 5.... 10
Friday, Grubbs & Young 4.... dry
23-15-17 Myers, W. C. Cushing 1..... dry
25-14-18 Myers, J. R. Parks 1..... dry
9-15-15 Lowery, P. Boyle et al 3..... 7
9-15-17 Roberts, H. E. Williams 1.. dry
3-15-18 Spaulding, Keller & Ingram 2.. dry
13-14-18 Harrison, W. J. Metzger et al 1 gas
4-13-16 Monday, C. Allred et al 1-A.. dry
4-13-19 Stover, M. S. Mussellem 1-A.. 10
Wells completed 13
Production 27
Dry 9
Gas 1
Gas production 1,000,000

OKFUSKEE COUNTY

15-11-11 Jacobs, Champlin O. & R. 11.. 300
11-10-11 Simmer, W. L. Umbrum 5..... 75
12-10-11 Robinson, Atlantic O. P. 2..... 75
21-10-11 Bird, F. D. Misener 1..... dry
8-13-10 Drew, Dixie Oil 1..... dry
15-11-11 Jacobs, Champlin O. & R. 12.. 150
11-10-11 Simmer, Atlantic O. P. 4..... 75
29-12-10 Monarye, Prod. & Refs. et al 1.1320
11-10-11 Simmer, W. L. Umbrum 6..... 40
35-11-11 Jackson, W. L. Umbrum 1..... dry
Wells completed 10
Production 2035
Dry 3

OKMULGEE COUNTY

27-16-12 Haskins, A. G. Hazlett et al 1-A..... dry
35-15-12 Cornelius, L. C. Wheeler et al 1-A..... gas
8-13-11 Kemp, W. C. Newman and Atlantic O. P. 1..... dry
25-13-12 Holleyman, J. L. Brock et al 1 dry
6-11-12 Hawkins, Moffett et al 7..... dry
19-15-13 Doyle, Kirkland & Son 1..... dry
19-15-13 Phillips, Kirkland & Son 3.. 12
19-15-14 Campbell, Devonian Oil 1-A.. dry
25-15-14 Sells, Unger Bros. 2..... dry
23-16-11 Lacey, Paraffine O. & R. 4..... 2
17-13-11 McKendre, Dixie Oil 1..... gas
15-13-12 Skelton, Sheldon Oil et al 4.. 25
24-15-14 Mathews, Tidal Oil 10..... 7
25-16-13 Francis, DeWitt & Baldridge 1-A..... dry
28-15-11 Scott, Thompson & Black 1... dry
14-14-12 Densen, L. H. Wentz et al 1.. dry
20-15-14 Lewis, J. A. Swindler 11..... 35
33-15-14 Serrell, H. L. Jolly et al 1.. 25
2-13-14 Tucker, A. G. Hazlett 6..... gas
8-15-12 Marshall, Iron Mtn. Oil 1..... gas
17-15-14 Howard, F. Hyer 1..... 12
6-14-13 Thompson, Becker & Hutchinson 1..... dry
7-14-13 Lacey, Speary Bros. & Mills 9 dry
20-13-14 Doyle, Gentry et al 2..... dry
Wells completed 24
Production 112
Dry 13
Gas 4
Gas production 36,000,000

OSAGE COUNTY

10-25- 8 Bement Oil Corp. 6..... dry
8-21- 9 Peters Pet. Co. 1..... dry
9-21- 9 Clint Moore est. 17..... 20
15-24- 8 McCune et al 11..... 5
16-23-11 Corbin & Haver 7..... 25
5-20-11 Pioneer Pet. Co. 7..... 20
28-27- 6 Kewanee O. & G. Co. 13..... 15
14-26- 6 Lewis Prod. Co. et al 1..... 65
33-26- 6 Carter Oil Co. 1..... 50
10-25- 8 L. C. Stanley et al 1..... dry
21-25-12 Phillips Pet. Co. 16..... 15
28-23- 9 I. T. I. Oil Co. 402..... 7
18-23-12 Silurian Oil Co. 52..... 20
8-21- 9 Peters & Edgewood 2..... dry
Peters & Edgewood 3..... dry
16-21- 9 Clint Moore est. 5..... dry
25-21- 9 Devonian Oil Co. 1..... 25
11-27- 5 Phillips Pet. Co. 17..... dry
11-27- 5 Phillips Pet. Co. 17..... dry
17-25-12 I. T. I. Oil Co. 29..... gas
9-21- 9 Clint Moore est. 19..... 5
Clint Moore est. 20..... 20
Wells completed 22
Production 292
Dry 8
Gas 1
Gas production 1,500,000

PAWNEE COUNTY

15-21-7 Rogers, Mowry, Welcy & Carson 1..... dry
14-20-9 Lennex, Thompson & Black 2.. gas
15-20-6 Vickers, Magnolia Pet. 3..... 20
28-20-9 Highee, Superior Oil et al 1.. dry
Wells completed 4
Production 20
Dry 2
Gas 1
Gas production 1,500,000

PONTOTOC COUNTY

30-5-5 Mole, LaSalle Oil Co. 1..... 75
19-5-8 Hutcheon, T. P. C. & O. Co. 3.. dry
19-5-8 Lucy, The Texas Co. 4..... 1262
18-5-8 Jones, American O. & R. 1..... 40
13-7-5 Harjo, Magnolia Pet. 1..... gas
8-5-8 Milliner, Westheimer & Daube 4. dry
19-5-8 Perry, Louisiana O. R. Corp. 16.1100
Whitney, W. R. Ramsey 3..... 955
Wade, Westheimer & Daube 7.. 400
20-5-8 Webb, W. R. Ramsey 4..... 140
32-5-5 Maulden, Superior Oil 2..... 180
4-4-8 Shields, Homaokla Oil 9..... dry
24-4-7 Alexander, O. K. Portland Cement Co. 1..... gas
Wells completed 13
Production 4152
Dry 3
Gas 2
Gas production 25,500,000

POTTAWATOMIE COUNTY

36-7-3 School land, Magnolia Pet. 2..... 30
19-7-4 Phillips, Shaffer O. & R. 2.. dry
20-7-4 Thompson, Healdton O. & G. 1.. 125
23-7-4 Freid, Independent O. & G. and Darby Oil 3..... 35
26-7-4 Cherry, Magnolia Pet. 1..... 5577
19-7-5 Youts, T. B. Slick 4..... 960
C. A. Yants, Magnolia Pet. 3 293
Thrailkill, Pure Oil 1..... 220
29-7-5 Nadash, Sinclair Oil 3..... 220
Nadash, Sinclair O. & G. 5.. 285
T. Fyke "D," Magnolia Pet. 2.. 66
30-7-5 Tolon, Shaffer O. & R. 1..... 1627
Stahl, Phillips Pet. Co. 1..... 135
Stahl, Phillips Pet. Co. 4..... 512
Blandin, Independent O. & G. 3.. 417
Blandin, Independent O. & G. 4.. 25
Blandin, Independent O. & G. 5.. 825
Blandin, Independent O. & G. 6.. 32
Stahl, Gypsy Oil Co. 4..... 840
Lynn, T. B. Slick 1..... 740
Lynn, T. B. Slick 3..... 205
Smith, T. B. Slick 1..... 195
5-9-5 Rogers, Mid-Continent Pet. 1 ..1190
Hunick, Gypsy Oil Co. 2..... 990
30-7-5 Gammon, Prairie O. & G. 6..... 1070
29-7-5 Wolfe, Prairie O. & G. 4..... 610
14-7-4 Singletary, Magnolia Pet. 3..... 139
23-7-4 Tonsite, Panther Oil 2..... 180
24-7-4 Blandin, Sinclair O. & G. 12.... 2115
25-7-4 Bruno, Gypsy Oil Co. 4..... 90
Collins, Gypsy Oil Co. 3..... 125
Collins, Gypsy Oil Co. 4..... 120
Cherry, The Texas Co. 2..... 1125
26-7-4 Thomas, Pure Oil Co. 1..... 4310
20-7-5 G. W. Fyke "B," Magnolia Pet. 1 436
30-7-5 Lynn, T. B. Slick 2..... 670
Stahl, Gypsy Oil Co. 3..... 210
18-8-5 Campbell, Prairie O. & G. 1.... 150
5-9-5 Roger, The Texas Co. 6..... 20
1-8-4 Hallum, Amerada Pet. 1..... 3975
14-7-4 Wallace, Independent and Darby 4..... 160
23-7-4 Harber, Darby Pet. Co. 2..... 25
23-7-4 Cherry, Shaffer O. & R. 3..... 717
24-7-4 Blandin, Sinclair O. & G. 13.... 3495
25-7-4 Gilbreath, Sinclair O. & G. 2.... 135
20-7-5 White, Magnolia Pet. 1..... 42
19-8-5 Bellars, Sinclair O. & G. 1..... 2000
20-7-5 Guinn, Mid-Continent Pet. 2..... dry
30-7-5 Stahl, Barnsdall Oil 3..... 1060
Tolon, Shaffer O. & R. 2..... 218
35-7-5 Whisenhunt, Tomlinson, Manning and Dye 1..... dry
25-7-4 Desmond, Prairie O. & G. 4..... 145
30-7-5 Gammon, Prairie O. & G. 7..... 210
Gammon, Prairie O. & G. 8..... 2675
Wells completed 54
Production 41,704
Dry 3

SEMINOLE COUNTY

1- 9-5 Sango, Gypsy Oil Co. 14..... 40
11- 8-6 Jones, Twin State 4..... dry
11- 7-6 C. Harjo, Carter Oil 2..... dry
24- 7-6 Larney, Carter Oil 3..... 735
Brinson, Pure Oil Co. 1..... 1405
21-10-7 Wariedo, Gypsy Oil Co. 1..... dry
6- 9-6 Campbell, Slick and Skelly 2.... 1556
3- 8-6 Jones, T. B. Slick 2..... dry
6- 8-6 Baby, Gypsy Oil Co. 1..... 20
11- 7-6 Milsey, Continental Oil 1..... dry
Denby, Magnolia Pet. 4..... 550
Hollins, Pure Oil 1..... 715
13- 7-6 Johnson, Shell Pet. 4..... 1246
14- 7-6 Talley, Blackwell O. & G. 4.... 600
Tewee, Carter Oil 5..... 633
Gibson, Prairie O. & G. 7..... dry
15- 7-6 Williams, T. B. Slick 8..... dry
5- 7-7 Lustey, Prod. & Refs. 1..... 150
32-10-6 Nevins, Mid-Continent Pet. 2.. 1075
13- 9-5 Gillim, Magnolia Pet. 1..... 3742
6- 9-6 James, Carter Oil Co. 5..... 80
James, The Texas Co. 2..... 585
7- 7-6 Coker, T. B. Slick and W. B. Fine 1..... 1005
4- 7-6 Walker, Twin State Oil 1..... dry
11- 7-6 C. Harjo, Carter Oil 3..... 5
23- 7-6 Cotcha, Gypsy Oil 5..... 25
26- 7-6 Wood, T. B. Slick 1..... 1100
5- 7-7 Smith, Mid-Continent Pet. 2.... 470
18- 5-8 Lucy, Burke Greis Oil 2..... 712
22-10-7 Sumpsey, Gypsy Oil 1..... 222
6- 9-6 Wisner, Burke-Greis Oil 2..... 325
9- 9-6 Mitchell, Carter Oil 1..... dry
21- 9-7 Island, Papoose Oil 1..... dry
11- 8-5 L. Harjo, Sinclair O. & G. 1...1704
33- 8-7 Sissie, Magnolia Pet. 1..... dry
23- 7-6 Cotcha, Gypsy Oil 6..... 380
Eleck, Mid-Continent Pet. 2.... dry
5- 7-7 Payne, Gypsy Oil 1..... 62
31- 5-7 Haney, Belchie & Laskey 1..... gas
18- 5-8 Cully, Anderson & Pritchare 7.1800
Lucy, The Texas Co. 5..... 850
19- 5-8 Sarney, Sunray Oil Co. 2..... 250
Wells completed 42
Production 22,144
Dry 12
Gas 1
Gas production 200,000

STEPHENS COUNTY

12-1s-4w Taylor, Atlantic O. P. 1..... 268
34-1s-8w Kagay, Magnolia Pet. 15..... 140
Simpson, Roy Carter 5..... dry
35-1s-8w Pool, Heydrick et al 1..... 110
11-1s-4w Rucktashel, Humble O. & R. 1 45
13-1s-4w Davidson, Clark & Cowden 2. 228
14-1s-4w Cole, Twin State Oil 1..... 120
34-1s-8w Simpson, Lone Eagle Oil 7.... 15
13-1s-4w Bell, Magnolia Pet. 4..... 91
25-1s-4w Peddycoart, Humble O. & R. 5 105
18-2s-7w Bristowe "A," Pace et al 9... 160
Bristowe "A," Pace et al 10.. 15
19- 1-8w Maxey, Brannon & Fisher 2.. dry
3-2s-8w Bush, Pace et al 4..... 200
10-2s-8w Helder, Mayer & Stanforth 1. dry
12-2s-8w Massey, George Pace et al 1.. 20
Wilson, Pace et al 9..... 15
Wells completed 17
Production 1532
Dry 3

WAGONER COUNTY

36-16-17 Brown, J. P. Duke et al 1.... gas
22-18-17 Childera, Elk Drlg. Co. 6..... gas
23-16-16 Jameson, Peterson & Young 3 dry
29-18-15 Henry, Gleason et al 5..... dry
27-16-17 Lewis, J. Ellis 1-A..... 10
Wells completed 5
Production 10
Dry 2
Gas 2
Gas production 11,500,000

MISCELLANEOUS COUNTIES

Beckham County—
21-9-23w Ensley, Magnolia Pet. 1..... gas

Caddo County—
5-5-9w Moss, Magnolia Pet. 3..... 10

Comanche County—
30-2-8w Price, Magnolia Pet. 2..... 7

Cotton County—
33-2s- 9w Sturgeon, G. E. Crane 1..... dry
2-2s-10w Moore, Moore et al 2..... dry

Grant County—
15-27-3w Swaggart, Argo Oil Co. 2..... 25

Jefferson County—
5-6s-7w Barrett, Dye & Fritz 1..... dry
25-6s-6w Spring "B," Bridwell et al 1. dry

Lincoln County—
31-17-5 Long, T. P. C. & O. Co. 3..... 12

Garvin County—
16-1-3w Harris, Magnolia Pet. 7..... gas
20-1-3w Derdeyn, Markham et al 3.... 20
10-4-3 Strickland, Garland Oil 1..... dry

Kiowa County—
4-6-16w Menton, J. M. Burke 1..... dry

Tillman County—
3-5s-15w Indian, A. N. Pearson 2..... dry

Marshall County—
30-5s-5 Sullivan, Armstrong 1..... dry

Logan County—
18-19-4w Webber, Sinclair O. & G. 2... 3272
20-19-4w Shaffer, J. E. Crosbie 1.... gas
Shaffer, J. E. Crosbie et al 1-A..... 2245

Hughes County—
11-5- 8 Stewart, T. P. C. & O. Co. 1.... dry
18-8- 9 Fixico, Pure Oil Co. 1..... dry
1-8-10 Penn, Bauer et al 1..... dry
21- 7- 8 Street, Jarvis & Holm 2..... 70

Payne County—
7-18-5 Goss, Prod. & Refs. 1-B..... 50

Tulsa County—
3-16-12 Whetstone, S. W. Anthony 3.. gas
14-19-10 Meyer, C. L. McMahon et al 1 dry
Wells completed 25
Production 5711
Dry 12
Gas 4
Gas production 38,000,000

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	6	470	1	0
Cowley	3	.....	2	1
Elk	4	240	1	0
Greenwood	11	550	4	0
Miscellaneous	22	1,865	14	3
Total Dec.	46	3,125	22	4
Total Nov.	99	5,175	48	8
Difference	53	2,050	26	4

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	8	21	29
Cowley	3	33	36
Elk	1	25	26
Ellis	2	14	16
Greenwood	12	23	35
McPherson	2	14	16
Marion	3	10	13
Russell	4	7	11
Sedgwick	9	17	26
Sumner	3	16	19
Woodson	1	9	10
Miscellaneous	27	56	83
Total December	74	245	319
Total November	44	244	288
Difference	30	1	31

WELLS COMPLETED

BUTLER COUNTY

6-27-6 Sluss "B" Garden et al 2..... 20
21-25-4 Albers, Dixie Oil 2..... 25
22-27-5 Brandenberger, Empire O. & R. 3-A..... 150
27-27-5 Sherrock, Empire O. & R. 3.... 175
3-27-6 Lewis, Davis & Hazlett 9..... 100
26-27-6 Brewer, Syndicate Oil Co. 1.... dry
Wells completed 6
Production 470
Dry 1

COWLEY COUNTY

21-31-4 Shrock, Independent O. & G. 1. dry
6-32-5 Brown, Arkansas Fuel Oil and Trees Oil 2-A ..... dry
5-35-5 Sterling, Brady & Hollis 1..... gas

Wells completed 3
Dry 2
Gas 1
Gas production 700,000

ELK COUNTY

10-31-10 Sawyer, Wakefield et al 1..... 15
Armstrong, Sherman et al 2.. 125
Sawyer, Derby Oil and Frazier 1 100
3-31- 8 Ferguson, E. B. Shawver 1..... dry

Wells completed 4
Production 240
Dry 1

GREENWOOD COUNTY

7-27-11 Grundy, Mohawk Oil 3..... 50
26-23-11 Ellis, Simmons and Amerada Pet. 6 ..... dry
4-23-13 Inthurm, Skelly Oil and Gore 3 10
35-23-11 Mead, Phillips Pet. Co. 1..... 175
21-23-11 Edwards, Empire O. & R. 9..... 100
6-25- 9 Olson, Murphy et al 6..... 40
14-22-11 Hood, Roxana and Swartz 1-B dry
22-23- 9 Teters, Empire O. & R. 1-B.. dry
26-23-11 Ellis, Simmons and Amerada Pet. 7 100
8-25-12 Herman, Smith et al 1..... dry
32-23-13 Newman, C. L. Sheedy 1..... 75

Wells completed 11
Production 550
Dry 4

MISCELLANEOUS COUNTIES

Franklin County—
25-16-17 Barton, Howard & Haworth 1 gas
Case, Howard & Haworth 1... dry

Clay County—
21-9-4 Bradberry, Roth & Faurot 1..... 20

Ellis County—
2-11-17w Slimmer, Streeter & Stearns 1 dry
8-11-16w Craig, T. B. Slick et al 1.... dry

McPherson County—
31-18-2w Anderson, McPherson O. & G. 2 ..... gas
32-18-2w Hawkinson, Midco Oil Co. 1.. 100

Osborn County—
15-8-15w Couley, Johnson et al 1..... dry

Geary County—
10-12-7 Chase, Pioneer Pet. 1..... dry

Osage County—
18-18-15 Jones, York State Oil 1..... dry

Russell County—
32-13-15w Union Pac. Ry., Eskridge et al 1 ..... dry
36-12-15w Haise, Stearns & Streeter 1.. dry

Coffey County—
8-22-14 Gayer, Union Gas 1..... gas
9-23-14 Baer, Cross et al 1..... dry

Marion County—
18-21-4 Regis, Gear et al 1..... dry

Morris County—
14-17-7 Sisson, Loomis & Anderson 1.. dry

Sedgwick County—
12-26-1w Lantz, Bu-Vi-Bar Pet. et al 1 820
7-26-1 Lyons, Bu-Vi-Bar Pet. et al 2 750
18-26-2 Strickland, Fisher, Lauck et al 1 ..... dry

Sumner County—
35-31-2 Buss, Pryor & Lockhart and Slick 1 ..... dry
27-34-2 Spence, Shawver et al 1..... 125
3-35-1w Knox, Dickey et al 1..... dry

Wells completed 22
Production 1865
Dry 14
Gas 2
Gas production 22,700,000

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Concho	1	....	1	..
Crane	1	200	..	..
Crockett	4	....	4	..
Fisher	3	110	2	..
Glasscock	1	....	1	..
Howard	14	12,354	2	..
Jones	3	80	2	..
Irion	2	....	2	..
Kent	1	....	1	..
Loving	2	140	..	..
Menard	2	....	2	..
Pecos	8	177,092	2	..
Taylor	1	....	1	..
Reagan	4	239	1	..
Runnels	1	....	1	..
Sutton	1	....	1	..
Upton	1	165	..	..
Winkler	35	134,347	2	..
Total Dec.	85	324,727	25	..
Total Nov.	125	239,740	31	1
Difference	40	84,987	6	1

Summary of Rigs and Drilling Wells

County—	Rigs	Drlg.	S.D.	Ttl.
Crane	1	4	..	5
Crockett	..	2	5	7
Fisher	1	3	3	7
Glasscock	3	5	1	9
Howard	11	47	5	63
Jones	10	21	4	35
Mitchell	1	4	..	5
Pecos	8	25	13	46
Reagan	1	2	8	11
Runnels	1	4	4	9
Upton	1	4	..	5
Ward	..	4	1	5
Winkler	9	97	6	112
Misc. counties	13	36	42	91
Total Dec.	60	258	92	410
Total Nov.	78	248	97	423
Difference	18	10	5	13

WELLS COMPLETED
CONCHO COUNTY

Maloy, Kemper Kimberlin et al 1 ..... dry

CRANE COUNTY

University-B, Simms Pet. Co. and Atlantic Oil Prod. Co. 2 200

CROCKETT COUNTY

University, Compton & Co. 1 ..... dry
University, Texas Canadian Oil Co. 1 .. dry
J. S. Todd, T. W. Callahan et al 1 .... dry
P. C. Coates, V. T. Bolin Co. 1 ..... dry

Completions 4
Dry holes 4

FISHER COUNTY

R. M. Decker, Roeser & Pendleton & Landreth Prod. Corp. 1-B ..... dry
E. G. Young, Cranfill & Reynolds 1 .... dry
J. A. Young, Cranfill & Reynolds 2 110

Completions 3
Production 110
Dry holes 2

GLASSCOCK COUNTY

S. R. Cox, Eastland Oil Co. and White Eagle Oil & Refg. Co. 1 ..... dry

HOWARD COUNTY

H. R. Clay, Dunnigan & Hyer 2 112
W. R. Settles-A, Henshaw Oil Corp. 1..5232
H. R. Clay-A, Marland Prod. Co. 11 45
W. J. Flowers, Mays, Nixon & Flower 1 dry
H. R. Clay, Dunnigan & Hyer 3 85
Dora Roberts-B, F. H. E. Oil Co. et al 5 1482
Kloh & Rumsey, Louisiana Oil Refining Corp. 1 ..... dry
Otis Chalk-E, Marland Prod. Co. 4 249
H. R. Clay, Merrick & Lamb 6 65
W. R. Settles, Louisiana Oil Ref. Corp. 1 1346
Dora Roberts, Marland Prod. Co. 1 1765
W. R. Settles-C, American Maracaibo Co. 1 968
W. R. Settles-A, Group No. 1 Oil Corp. and Marland Prod. Co. 5 205
Dora Roberts, Magnolia Pet. Co. 14 .. 800

Completions 14
Production 12,354
Dry holes 2

JONES COUNTY

King, Evans et al 1 ..... dry
Willis, Stough et al 1 ..... dry
Camp, The Texas Company 1 80

Completions 3
Production 80
Dry holes 2

IRION COUNTY

Harlan Horney, Central Oil Co. 1 ..... dry
W. H. Williams, Sun Oil Co. 1 ..... dry

Completions 2
Dry holes 2

KENT COUNTY

N. V. Bibly, J. S. Cosden & Co. 1 ..... dry

LOVING COUNTY

Wheat & Ramsey, Lockhart & Co. 1 40
R. L. Allen, Lockhart & Co. 2 100

Completions 2
Production 140

MENARD COUNTY

Callen, Barnett & Drake 1 ..... dry
Eckardt, Panhandle Refining Co. 1 .... dry

Completions 2
Dry holes 2

PECOS COUNTY

I. G. Yates-C, Mid-Kansas O. & G. Co. 55,584
I. G. Yates, Gulf Prod. Co. 23 ..... dry
I. G. Yates-F, Mid-Kansas O. & G. Co. 4 52
Fee, Pecos Valley Oil Co. 1 112
M. A. Smith, Lease 1, Section 23, the California Co. 4 1,680
I. G. Yates-H, Mid-Kansas Oil & Gas Co. 7 13,080
I. G. Yates-C, Mid-Kansas Oil & Gas Co. 8 106,584
I. G. Yates, Rio Pecos Oil Co. 1 .... dry

Completions 8
Production 177,092
Dry holes 2

TAYLOR COUNTY

Stevens, Grisham-Hunter Corp. 1 ..... dry

REAGAN COUNTY

Sawyer Cattle Company-A, Empire Gas & Fuel Co. 1 ..... dry
University, Big Lake Oil Co. 145 115
University, Big Lake Oil Co. 148 75
University, Skelly Oil Co. 3 49

Completions 4
Production 239
Dry holes 1

RUNNELS COUNTY

Russell, Agnew & Shields 1 ..... dry

SUTTON COUNTY

B. H. Cusenbary, Phillips Petroleum Co. 1 ..... dry

UPTON COUNTY

H. L. McClintic, Keck Investment Co. 1. 165

TAYLOR COUNTY

T. G. Hendricks-F, Cranfill & Reynolds 1 ..... dry
Grisham-Hunter, T-89-H, Southern Crude Oil Purch. Co. 1 300
Ida Hendricks, T-88-A, Southern Crude Oil Purch. Co. 5 2,400
Ida Hendricks, T-88-D, Southern Crude Oil Purch. Co. 2 2,400
T. G. Hendricks, T-67-3-B, Southern Crude Oil Purch. Co. 5 720
T. G. Hendricks, May Prod. Co. 1 50
E. W. Cowden, Prairie Oil & Gas Co. 2 24,096
Grisham-Hunter-C, Pure Oil Co. 10... 20,000
Grisham-Hunter-F, Shell Petroleum Corp. 7 295
Grisham-Hunter, T-68-3-B, Southern Crude Oil Purch. Co. 2 546
Ida Hendricks, T-67-B, Southern Crude Oil Purch. Co. 3 528
Ida Hendricks, T-88-I, Southern Crude Oil Co. 6 600
T. G. Hendricks, T-88-T, Southern Crude Oil Purch. Co. 4 100
Lum Daugherty, Amerada Petroleum Corp. 1 690
Grisham-Hunter-E, Atlantic Oil Prod. Co. 5-A 30,000
Grisham-Hunter-B, Eastland Oil Co. et al 1 150
T. G. Hendricks-B, Marland Production Co. 1 150
Ida Hendricks-C, Marland Production Co. 1 ..... dry
E. W. Cowden, Prairie Oil & Gas Co. 3 6,000
Grisham-Hunter-C, Pure Oil Co. 9 12,000
Grisham-Hunter-F, Shell Petroleum Corp. 6 668
T. G. Hendricks-B, Skelly Oil Co. 2... 15
Ida Hendricks, T-88-A, Southern Crude Oil Purchasing Co. 6 1,680
Ida Hendricks, T-88-B, Southern Crude Oil Purch. Co. 3 12,000
T. G. Hendricks, T-88-M, Southern Crude Oil Purch. Co. 6 700
T. G. Hendricks, T-88-T, Southern Crude Oil Purch. Co. 3 20
T. G. Hendricks, T-88-U, Southern Crude Oil Purch. Co. 6 450
E. W. Cowden, Amerada Petroleum Corp. 3 2,457
Grisham-Hunter, Humble Oil & Ref. Co. 17 5,424
Grisham-Hunter-C, Pure Oil Co. 14 .. 1,752
T. G. Hendricks, T-67-2-D, Southern Crude Oil Purch. Co. 3 1,776
T. G. Hendricks, T-88-M, Southern Crude Oil Purch. Co. 26 3,240
T. G. Hendricks, T-88-U, Southern Crude Oil Purch. Co. 5 1,140
T. G. Hendricks, T-88-U, Southern Crude Oil Purch Co. 7 1,800
Grisham-Hunter-A, Texon Oil & Land Co. 6 200

Completions 35
Production 134,347
Dry holes 2

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	41	757	24	..
Brown	35	606	16	1
Burnet	1	....	1	..
Callahan	18	181	9	..
Coleman	28	976	15	4
Clay	1	....	1	..
Cooke	6	173	3	..
Eastland	19	233	7	3
Erath	1	....	1	..
Hardeman	1	....	1	..
McCulloch	4	....	4	..
Montague	5	105	..	..
Jack	6	126	4	..
Palo Pinto	3	....	2	1
Shackelford	10	551	5	1
Stephens	7	7	3	3
Throckmorton	3	74	2	..
Wichita	45	3,906	17	..
Wilbarger	39	6,566	8	..
Young	40	381	22	..
Total Dec.	322	14,642	145	13
Total Nov.	368	13,510	173	18
Difference	46	1,132	28	5

Summary of Rigs and Drilling Wells

County—	Rigs	Drlg.	S.D.	Ttl.
Archer	13	20	3	36
Brown	5	23	31	59
Callahan	..	10	5	15
Coleman	10	23	16	49
Cooke	5	6	7	18
Clay	..	1	5	6
Eastland	5	17	10	32
Haskell	..	2	7	9
Jack	4	6	8	18
Montague	..	3	4	7
Palo Pinto	3	9	4	16
Shackelford	1	17	..	18
Stephens	1	16	4	21
Throckmorton	..	1	1	2
Wichita	20	28	5	53
Wilbarger	16	63	11	90
Young	10	18	8	36
Misc. counties	4	16	12	32
Total Dec.	97	279	141	517
Total Nov.	71	299	135	505
Difference	26	20	6	12

WELLS COMPLETED
ARCHER COUNTY

J. D. Lyles, Atlantic Oil Prod. Co. 1.... dry
L. F. Wilson-I, Humble Oil & Refining Co. 1 ..... dry
Oil Investment Co., Humble Oil & Refining Co. and Rayzor 1 ..... dry
J. H. White, Panhandle Refining Co. 1 dry
T. B. Wilson, The Texas Company 1... dry
J. T. Richardson, Bridwell Oil Co. et al 1 dry
J. H. Turbeville-A, L. T. Burns 1..... dry
J. T. Richardson, Madden & Hunt 11.. 30
J. T. Richardson-A, Madden & Hunt 1. dry
J. H. Roberson, Magnolia Pet. Co. 1.. dry
H. O. Prideaux-C, Panhandle Refining Co. et al 9 1
J. T. Richardson-E, Prairie Oil & Gas Co. 2 40
W. L. Andrews, Rathke Oil Co. 8 2
J. L. Jackson, The Ascot Co. 1 ..... dry
L. F. Wilson, Section 31, H. Hines et al 1 ..... dry
A. P. Jackson Estate, J. H. Johnson et al 1 ..... dry
J. D. Lyles, J. Turner et al 2 78
A. M. Hennig, F. C. Grebin et al 1..... 122
T. B. Wilson, Pandem Oil Corp. 1..... dry
G. Williams, J. B. Peacock 1 92
Meade Estate, Shasta Oil Co. 1 ..... dry
W. O. Hayter, The Texas Company 10.. 10
Hill, The Texas Company 21 86
W. O. Hayter-A, Gulf Prod. Co. 7 ..... dry
Wilson-McCrory-K, L. T. Burns 1..... dry
J. E. Parrish-A, Parrish, Continental Oil Co. 2 13
C. Kreba, T. F. Hunter 1 ..... dry
L. F. Wilson, Jeffers et al 1 ..... dry
L. F. Wilson-B, D. O. Johnson et al 10 55
W. H. Taylor, W. C. Young 1 3
A. F. Marsh, Rogers & Kelleher 1..... dry
R. E. Hill, The Texas Company 22..... 87
C. A. Montgomery, The Texas Company Prideaux-C, Panhandle Refining Co. et al 10 3
G. Williams, Frank Parsons et al 1.... dry
J. T. Richardson, The Texas Company 23 35

Completions 41
Production 757
Dry holes 24

BROWN COUNTY

Eubanks, Cranfill & Reynolds 15..... 60
Butler, Young Brothers, Alexander and Texas Fidelity Oil Co. 1 ..... dry
Lee, Wise, Amerada Petroleum Corp. 3. dry
Williams, Anderson et al 1 ..... dry
Armstrong, Armstrong et al 1..... dry
Miller, Bearman and Barbara Oil Co. 2. 40
R. Hickman, Cranfill & Reynolds 1..... dry
Lewis-A, Hammon & Garrett 5 10
Newton-B, Mitchem et al 1 15
Wooldridge, Ramsey 1 ..... dry
Hickman, Young Brothers, Alexander & Woodley Pet. Co. 30
Shields, Bruce 3 ..... dry
Moore, Crabb, McNeil & Stout 1..... dry
Bailey, Lloyd et al 1..... dry
Nash, Olvey & Robbins 1 ..... dry
McGarfity, Stewart et al 1 3
Stout, Bradstreet & Stout 15..... 15
H. Byler, Humble Oil & Refining Co. 8 20
Kilgore-A, Humble Oil & Refining Co. 7 8
R. Hickman, Kone Prod. Co. 20..... 100
R. Hickman, Kone Prod. Co. 21..... 125
Spence, Meridian Petroleum Co. 1..... dry
R. Hickman, Phillips Petroleum Co. 17. dry
H. Byler, The Texas Company 5..... 10
R. Hickman, Young Brothers, Alexander and Woodley Pet. Co. 13..... 50
Collier, Dr. Lloyd et al 12..... dry
Hill, Midland Oil Co. 1..... dry
R. Hickman, Young Brothers, Alexander and Woodley Pet. Co. 16 50
Newton, Burris et al 10..... 90
H. Byler, Humble Oil & Refining Co. 7. 35
Lehman, Kingwood Oil Corp. 1 ..... dry
Rosser, Milham Corp. 8 ..... dry
McCulley, Crown Pet. Co. 1 ..... dry
Hale, Kerr 2 ..... dry
Hartgrove, Prairie Oil & Gas Co. 1 30

Completions 31
Production 940
Gas production 1,500,000
Dry holes 31

BURNETT COUNTY

Warden, F. C. Clark 1 ..... dry

CALLAHAN COUNTY

Eubanks, fee 8 1
Klutts, Grass Roots Oil Co. 5..... dry
Bruce, Humphreys Brothers 1..... dry
Hatchett, Moutray Oil Co. 5 ..... dry
Hatchett, Reiter-Foster Oil Corp. 6.... 15
Hatchett, Reiter-Foster Oil Corp. 8.... 40
Hatchett, Reiter-Foster Oil Corp. 10... 10
Hatchett, Reiter-Foster Oil Corp. 11... 15
Tatum, Shaheen et al 1..... dry
Hickman, Holmes et al 1..... 15
Hickman, Holmes et al 2..... 15
Hatchett, Moutray Oil Co. 6 ..... dry
Gilliland, Prairie Oil & Gas Co. 1..... dry
Hatchett, The Texas Company 10..... 40
Hatchett, The Texas Company 11..... 15
Hatchett, The Texas Company 12..... dry
Harf, J. C. Van Arx 1..... dry
Hatchett, Reiter-Foster Oil Corp. 9.... 15

Completions 11
Production 135
Dry holes 3

COLEMAN COUNTY

F. Golson, Duncan et al 1..... dry
Kemp, Kingwood Oil Corp. 1..... dry
Tholl Oil Co., ReBort & Sullivan 1..... dry
M. T. Overall, Continental, Atlantic et al 2 130
Jennings-C, Cunningham et al 5..... 75
Overall, McGahhey et al 1 ..... gas
Burney, Meredith & Benton 1..... dry
Hays, Ross Drilling Co. 1..... gas
Hays, Tealsorth Company 3..... 360
Morris-B, Eastland Oil Co. et al 1.... 480
Eddington, Morrison & St. John 1..... gas
Moody, Byrd & Goldston 3..... 75
Hinds, Jamison & Pollard 1..... dry
Casey, Gwinnup et al 1..... dry
McClelland, Midsun Oil Corp. 1..... dry
Hill-A, L. Smith 2..... 45
Overall, Continental Oil Co. et al 9.... dry
Overall, Independent Oil & Gas Co. 1... dry
Gill, Midwest Exploration Co. 1..... dry
Banister, Owens et al 1..... dry
Moody, Tower & McKanna 3..... 75
Kingsbury, Turman et al 1..... dry
Hays, Amerada and Ross Drilling Co. 1 dry
Moody, Byrd & Goldston 4..... 30
Matthews, Humphrey Brothers et al 3... 30
Ward, Kenwood Oil Corp. 2..... dry
Weir, Sterling Oil Co. and Ross 1..... gas
Overall, Texas Prod. Co. 1..... dry

Completions 21
Production 976
Gas production 16,445,000
Dry holes 15

CLAY COUNTY

Gault, Grubbs & Gill 1-A..... dry

COOKE COUNTY

Field & Bowers, C. M. Beckner et al 1. dry
Wheelock, W. L. Griffle et al 1..... 15
Timmis-A, Kenmore Oil & Gas Co. 3.... 90
W. H. Dougherty, W. E. Benson et al 1. dry
E. Ball, Green and Skelly Oil Co. 2..... dry
A. J. Dennis, Petroleum Prod. Co. and United Prod. Co. 1 75

Completions 4
Production 175
Dry holes 1

EASTLAND COUNTY

Schmick, Ealy 1..... gas
McCord, Mays & Keath 1..... dry
Schmick, Price 1..... gas
Johnson, Teatsorth et al 4..... 15
Watson, Cranfill & Reynolds 1..... dry
Noble, Root et al 1..... 40
Coon, Hoffman & Page 1..... 15
Fee, T. P. Coal & Oil Co. 2..... 30
Johnson, Section 4, Lewis et al 1..... dry
Simmons, Atwood et al 1..... 45
Fox, Dale Oil & Refg Co. 13..... dry
Fee, T. P. Coal & Oil Co. 3..... dry
Harrell, Wilkins et al 1..... gas
Watson, Root et al 2..... 35
Harrison, Trammell 1..... dry
Cade et al, Bennett & Smith 1..... dry
McGee, Harbin et al 1..... 10
Johnson, C. B. McBride 1..... 15
Dalberry, Garrett & Moore et al 1..... dry

Completions 19
Production 233
Gas production 3,200,000
Dry holes 7

ERATH COUNTY

Barton, Peters et al 1..... dry

HOCKEMAN COUNTY

Clisbee, The Texas Company 1..... dry

McCULLOCH COUNTY

Shelton, Haggerty et al 1..... dry
Barton, Lanning et al 1..... dry
Wells, McLean & Jamison 1..... dry
Barton, Lanning et al 2..... dry

Completions 4
Dry holes 4

MONTAGUE COUNTY

M. H. Salmon-A, Bridwell Oil Co. 6..... 21
M. H. Salmon-A, Bridwell Oil Co. 7..... 21
W. W. Jones-A, Continental Oil Co. 4.... 16
L. Keck-A, Pure Oil Co. 9..... 22
L. Keck-A, Pure Oil Co. 10..... 15

Completions 5
Production 105

JACK COUNTY

A. R. Kuykendall, Lindsey Drilling Co. and Petroleum Prod. Co. 1..... dry
O. Thomason, Bryson et al 1..... dry
J. A. Jones Estate, Buttram Pet. Co. 10 60
J. M. Daugherty, Panhandle Ref. Co. 1. 45
W. T. Nichols, T. G. Shaw Interests 1.. dry
W. D. Moore, E. W. Walton et al 1..... dry

Completions 6
Production 120
Dry holes 4

PALO PINTO COUNTY

Belding, Chestnut & Smith Corp. 1..... dry

Edmondson, Upham Gas Co. 6 ..... dry
Rector, Leiser & Snebold 1 ..... gas

Completions 3
Gas production 500,000
Dry holes 2

SHACKELFORD COUNTY

Newell, Collett et al 1 ..... dry
Dyer, Midwest Exploration Co. 2 40
W. I. Cook-A, Section 61, Roeser & Pendleton 28 75
W. I. Cook-A, Section 62, Roeser & Pendleton 11 ..... gas
Flippin, Cranfill & Reynolds 1 50
J. W. Erharat, T. James 1 ..... dry
W. I. Cook-A, Section 60, Roeser & Pendleton 84 40
W. I. Cook-A, Section 61, Roeser & Pendleton 27 50
W. I. Cook-A, Section 61, Roeser & Pendleton 26 50
W. I. Cook-A, Section 83, Roeser & Pendleton 2 70
W. I. Cook-A, Section 83, Roeser & Pendleton 3 40
Sedwick, The Texas Company 4 6
Walker, Mack Best et al 1 ..... dry
Nail, George Callahan 1 ..... dry
Esell, C. Morton et al 1 ..... dry
W. I. Cook-A, Section 60, Roeser & Pendleton 85 35
W. I. Cook-A, Section 61, Roeser & Pendleton 30 50
Matthews, Section 34, Tannehill et al 4. 40
Sedwick, The Texas Company 5 5

Completions 19
Production 551
Gas production 1,500,000
Dry holes 5

STEPHENS COUNTY

Patton, Amerada Pet. Corp. 1 ..... dry
Ming, Livingston & Wellman 1 ..... gas
Jackson, Clark 1 7
Hancock, T. P. Coal & Oil Co. 2 ..... gas
Satterfield Heirs, Thomas et al 1 ..... dry
Compton, Klinefelder et al 1 ..... gas
Powell, Phillips Pet. Co. 1 ..... dry

Completions 7
Gas production 16,000,000
Dry holes 3

THROCKMORTON COUNTY

Wilhelm, Jones et al 1 ..... dry
Reynolds Cattle Co., McCurdy et al 3 .. dry
Parker, Humble Oil & Refining Co. 1 .. 74

Completions 3
Production 74
Dry holes 2

WICHITA COUNTY

L. O. Saunders Estate, Humble Oil & Refining Co. 2 ..... dry
Fee, American Refining Co. Properties 1 dry
Bishop, Comac Oil Co. and Prairie Oil & Gas Co. 1 92
Waggoner Brothers, Hines and Humble Oil & Refining Co. 10 ..... dry
Waggoner Brothers, Hines and Humble Oil & Refining Co. 11 143
Maer-A, Magnolia Petroleum Co. 4 ..... dry
W. R. Pace, Magnolia Pet. Co. 5 ..... dry
W. R. Pace, W. B. Omohundro 19 90
G. L. Nance, Ryan Pet. Corp. 100 240
G. L. Nance, Ryan Pet. Corp. 101 250
Kemp & Kempner, Staley & Wynne 4 .. 200
Waggoner Bros., United Prod. Co. 2 .. dry
Munger, C. B. Bailey 27 10
T. L. Burnett et al, Sec. 3, Bridwell & Heydrick 3 ..... dry
Kemp & Kempner, Coleman & Coppock 12 50
N. Michie, T. J. Cottom et al 2 ..... dry
S. H. McCarty-C, W. H. Hammon et al 11 50
S. H. McCarty-D, W. H. Hammon 6 50
Kemp & Kempner, Holbrook & Wood 26 740
McCarty, Lee, 3, Laning, admx. 7 80
J. R. Pace, W. B. Omohundro 20 ..... dry
Kemp & Kempner, Staley & Wynne 5. 460
Munger, C. B. Bailey 28 80
Allen & Kemp, C. W. Clark 3 ..... dry
Allen & Clark, C. W. Clark 4 ..... dry
Kemp & Kempner, Coleman & Coppock 17 325
M. Dodson, G. A. Everts 1 ..... dry
S. H. McCarty-C, W. H. Hammon et al 12 81
McCarty-Scott, Hammon et al 10 ..... dry
Amer. Ref. Co. Prop., Hammon & Garrett 3 2
Wm. Guthrie, H. Hines et al 1 ..... dry
Waggoner Bros., Hines and Humble O. & R. Co. 14 38
Martin, Regal Oil Co. and Clark 1 10
Hodges-B, United Producers Co. 1 43
Kemp & Kempner, United Producers 1 118
J. L. Jackson, The Ascot Co. 2 ..... dry
T. L. Burnett, Bridwell & Heydrick 4 dry
Waggoner Bros., Hines and Humble O. & R. Co. 12 33
Donohoo, Magnolia Pet. Co. 11 26
G. L. Nance, Ryan Pet. Corp. 11 125
G. L. Nance, Ryan Pet. Corp. 102 60
G. L. Nance, Ryan Pet. Corp. 103 250
G. L. Nance, Ryan Pet. Corp. 104 10
H. O. Case, Staley & Wynne 1 ..... dry
Kemp & Kempner, Staley & Wynne 6 .. 250

Completions 45
Production 3906
Dry 17

WILBARGER COUNTY

W. T. Waggoner-S, Fain-McGaha Oil Corp. 18 350
W. T. Waggoner-S, Fain-McGaha Oil Corp. 19 800
W. T. Waggoner-MM, Phillips Pet. 2.. 9
W. T. Waggoner-B, Baker et al 8 250
W. T. Waggoner-C, Barkley & Meadows 7 125
W. T. Waggoner-K, Consolidated Oil 1 dry
W. T. Waggoner-B, Cosden & Co. 29.. 120
W. T. Waggoner-S, Fain-McGaha Oil Corp. 20 250
W. T. Waggoner-Best, Phillips Pet. 1. dry
W. T. Waggoner-NN, Phillips Pet. 20. 65
W. T. Waggoner-E, Robertson et al 1. dry
W. T. Waggoner, Simms Pet. Co. 8 147
W. T. Waggoner-F, Staley-Wynne & Co. 2 ..... dry
W. T. Waggoner-F, Staley-Wynne & Co. 3 400
W. T. Waggoner-I, Waggoner Ref. 5.. 700
W. T. Waggoner-B, Baker et al 9..... 200
W. T. Waggoner-C, Baker et al 2..... dry
W. T. Waggoner, Bass & Dillard 5..... dry
W. T. Waggoner-B, Cosden & Co. 28.. 25
W. T. Waggoner-B, Cosden & Co. 30.. 38
W. T. Waggoner-AA, Fain-McGaha Oil Corp. 1 50
W. T. Waggoner-S, Fain-McGaha Oil Corp. 23 450
W. T. Waggoner-V, Fain-McGaha Oil Corp. 1 ..... dry
W. T. Waggoner-A, J. B. McKanna, agt. 3 112
W. T. Waggoner-Anna, Phillips Pet. 1. 70
W. T. Waggoner-H, Phillips Pet. 3 ... 30
W. T. Waggoner-B, Prairie O. & G. 7. 105
W. T. Waggoner-G, Staley-Wynne & Co. 1 139
W. T. Waggoner-E, The Texas Co. 16. 109
W. T. Waggoner-L, The Texas Co. 1.. dry
W. T. Waggoner-E, Waggoner Ref. 11. 110
W. T. Waggoner-S, Fain-McGaha Oil Corp. 24 400
W. T. Waggoner-S, Fain-McGaha Oil Corp. 25 400
W. T. Waggoner, Lewis Prod. Co. 2.... 155
W. T. Waggoner-E, Shaw Oil Co. 1.. 412
W. T. Waggoner, Simms Pet. Co. 9... 50
W. T. Waggoner-M, The Texas Co. 1.. 100
W. T. Waggoner-G, Waggoner Ref. 3.. 45
W. T. Waggoner-H, Waggoner Ref. 15. 350

Completions 39
Production 6566
Dry 8

YOUNG COUNTY

C. W. Johnson, Dorian et al 1..... 45
C. W. Johnson-C, Pennell Oil Co. 7.. 2
Bernhardt, Prairie O. & G. Co. 1..... dry
Stewart, Burns et al 1..... dry
Rushing, Clark et al 1..... dry
Clark, Eckerty et al 1..... dry
Hawkins, King Royalty Co. et al 12.. 25
C. W. Johnson, Lynch & Whitehill 3.. 6
Davis, Mook-Texas Oil Co. 11..... dry
Jackson, Pet. Producers Co. 1..... dry
Parris-D, Pet. Producers Co. 1..... 18
Kunkel, Prairie O. & G. Co. 4..... 14
Campbell, Prairie O. & G. et al 4..... 30
Sweet, Riggs et al 6..... 10
Sweet, Riggs et al 7..... 12
Alexander, Scott et al 1..... dry
Casey, Williams et al 2..... dry
Horton, Wootten & Reed 1..... dry
Bryan, Bundy et al 1..... dry
Boone, Dorian et al 12..... 12
C. W. Johnson, Dorian et al 2..... 2
Watson-B, Holbrook & Woods 4..... 25
Watson-B, Holbrook & Woods 5..... 10
C. W. Johnson, Magnolia Pet. Co. 6.. dry
Jones, Pennell & Holcombe 1..... dry
L. Parish-B, Pet. Producers Co. 2..... dry
Moreland, Rhodes 1 ..... dry
O. L. Sweet, Riggs et al 8..... 30
Barrett, Ulrey 1 ..... dry
R. Campbell, Underwood Drlg. et al 2. 16
R. Campbell, Underwood Drlg et al 3. 16
Bryan, Pitzer & West 1..... 35
Taylor, United Royalty Co. et al 1.... dry
Kunkel-C, P. F. Gwynn 2..... 58
B. Hawkins, King Royalty Co. 13..... dry
Davis, Kleiner et al 2..... dry
McDonald, Nix et al 1..... dry
Cox, Pennell Oil Co. et al 1..... dry
O. L. Sweet, Riggs & Oliphant 1..... dry
J. A. Buster, Willis & Gatewood 1.... dry

Completions 40
Production 361
Dry 22

TEXAS PANHANDLE

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Gray	19	1,016	6	1
Hutchinson	6	580	1	..
King	1	580	1	..
Moore	1	1,230	..	..
Wheeler	4	....	1	3
Total Dec.	31	2,826	9	4
Total Nov.	34	2,974	6	9
Difference	3	148	3	5

Summary of Rigs and Drilling Wells

County—	Rigs	Drlg.	S.D.	Ttl.
Carson	2	7	5	14
Gray	11	37	7	55
Hutchinson	10	15	7	32
Moore	3	9	..	12
Wheeler	7	5	7	19
Misc. counties	2	7	10	19
Total Dec.	35	80	36	151
Total Nov.	28	85	42	155
Difference	7	5	6	4

WELLS COMPLETED
GRAY COUNTY

J. M. Shaw, Lefors Petroleum Co. 3.... dry
H. M. Davis, The Texas Company 3.... 175
B. Bull, The Texas Company 1..... 57
J. B. Bowers, Magnolia Pet. Co. 3..... 16
W. Archer, Magnolia Pet. Co. 2..... 30
J. M. Shaw, Lefors Petroleum Co. 4.... dry
W. Clayton, The Shamrock Co. 1..... 45
J. E. Williams, Whalen & Warren 1 .... dry
E. E. Barrett, Osborn et al 1 ..... dry
J. S. Morse, Adams Oil Co. 2 120
J. S. Morse, Biggs et al 1 ..... dry
J. S. Morse, Danciger Oil & Refg. Co. 3.. gas
J. M. Shaw, Lefors Petroleum Co. 8.... 120
M. B. Davis, The Texas Company 3.... dry
S. W. McLarty-A, The Texas Company 8 88
B. Bull, Gardner & Collins, 1 100
Davidson-Myson, Phillips Pet. Co. 2.. 120
A. Holmes, Tract-A, Gulf Prod. Co. 3.. 120
S. W. McLarty, Gulf Prod. Co. 1..... 25

Completions 19
Production 1016
Gas production 15,000,000
Dry holes 6

HUTCHINSON COUNTY

Johnson Bros., Rock Creek Oil Co. 2.. 225
Johnson Bros., Devonian Oil Co. 9.... 45
Johnson Bros.-Florence, Phillips Petroleum Co. 3 240
C. E. Jasper, Sand Creek Oil Co. 2..... 20
J. A. Whittenburg-Elra, Phillips Petroleum Co. 12 ..... dry
Johnson Bros.-Montgomery, White Eagle Oil & Refining Co. 4 50

Completions 6
Production 580
Dry holes 1

KING COUNTY

J. H. Johnson, The Texas Company 1.. dry

MOORE COUNTY

Armstrong & Byrd, Skelly Oil Co. 4.... 1230

WHEELER COUNTY

Gossett, Martin & DeBous 1..... gas
M. Ackley, Lone Star Gas Co. 1..... gas
J. Shelton, White et al 1 ..... dry
Woodley-B, Vaughan et al 1..... gas

Completions 4
Gas production 163,000,000
Dry holes 1

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry*	Gas	Rigs	Drlg.	Ttl.
Bowie	0	0	0	0	0	1	1
Camp	0	0	0	0	0	1	1
Cass	0	0	0	0	0	1	1
Harrison	1	0	1	0	0	1	1
Panola	4	0	1	3	4	12	16
Red River	0	0	0	0	0	3	3
Shelby	0	0	0	0	0	2	2
Total Dec.	5	0	2	3	4	21	25
Total Nov.	6	147	1	4	5	18	23
Difference	1	147	1	1	1	3	2

*Gas production: Panola County 51,000,000.

HARRISON COUNTY

E. M. Fuller Survey; Baldwin, McRitchie et al 1 ..... dry
PANOLA COUNTY
B. C. Jordan Survey: Thomas Moore, Natural Gas Producing Co. 2 .. gas
Jane Thorpe Survey: Griffin, C. F. Steele 1 (drk) ..... abd
B. C. Jordan Survey: Crenshaw, D. Thomason 11 ..... gas
James Matthews Survey: Robinson, C. W. White 1 ..... gas

Gas production 51,000,000

EAST CENTRAL TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Anderson	2	2,712	1	0	0	8	8
Cherokee	1	504	0	0	0	1	1
Camp	1	0	1	0	0	0	0
Freestone	0	0	0	0	0	1	1
Falls	1	0	1	0	0	2	2
Henderson	0	0	0	0	1	1	2
Limestone	3	126	2	0	0	2	2
Nacogdoches	1	0	1	0	0	0	0
Rusk	0	0	0	0	0	1	1
Smith	0	0	0	0	0	1	1
Total Dec.	9	3,342	6	0	1	17	18
Total Nov.	5	2,410	3	0	2	16	18
Difference	4	932	3	0	1	1	0

WELLS COMPLETED
ANDERSON COUNTY

Lizzie Smith, Humble Oil & Ref. Co. 2. abd
Todd, Humble Oil & Ref. Co. 1-A..... 2712

Wells completed 2
Production 2712
Abandoned 1

CHEROKEE COUNTY

Mandalstan, Humble Oil & Ref. Co. 4.. 504
CAMP COUNTY
J. C. Boyd, Rodgers (J. C.) 1..... abd
FALLS COUNTY
Ward, Paggi Brothers 1 ..... abd
LIMESTONE COUNTY
Black, Mexia Dev. Co. 1 ..... abd
Black, Reiter & Moutray 1 ..... abd
Rhea, Why Not Oil Co. 2 126

Wells completed 3
Production 126
Abandoned 2

NACAGDOCHES COUNTY

Birdwell (H. W.) Stein & Lewis 1 ..... abd

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Mirando	28	3,945	16	6	16	37	53
Joe Bruner	18	3,005	8	0	2	49	51
Luling Field	3	97	0	0	0	2	2
Agua Dulce	3	0	0	3	0	3	3
Saxet Field	1	0	0	1	0	1	1
Refugio Field	7	125	1	3	1	16	17
Miscellaneous	28	684	22	2	15	76	91
Total Dec.	88	7,856	47	15	34	184	218
Total Nov.	84	6,160	45	10	29	165	194
Difference	4	1,696	2	5	5	19	24

WELLS COMPLETED
SCHOOLFIELD-O'BYRNE—DUVAL

Sun Oil Co. 1 180
Magnolia Petroleum B-2 1000
The Texas Company 1 250
HUMBLE-REITER-FOSTER
Humble Oil & Ref. 11 ..... gas
Humble Oil & Ref. 10 ..... gas
COLE GAS FIELD
J. J. O'Hern 1 ..... gas
O'Hern & Seacord 7 ..... abd
RANDADO FIELD—JIM HOGG
Randado Oil Corp. 26 75
ALWORTH FIELD
Alworth-Stevents-Hild 14 ..... abd
STARR COUNTY
The Texas Company 3 M ..... gas
ALBERCAS FIELD—WEBB
O. W. Killam 30 ..... abd
O. W. Killam 29 ..... abd
O. W. Killam 27 ..... gas
O. W. Killam 28 300
Houston Oil A-2 ..... gas
Sun Oil Co. A-8 250
Rycade Oil Corp. 4 510
Rycade Oil Corp. 5 1300
MAGNOLIA—COLE POOL
Cole Petroleum Co. 65 70
WILDCATS
Marts-Beavens 1 ..... abd
O. W. Killam 1 ..... abd
Serna-Forrest 1 ..... abd
Suladie & Mimms 1 ..... abd
Baku Oil Co. 1 ..... abd
Wm. R. Jewell 1 ..... abd
Louis Hausman 1 ..... abd
JENNINGS FIELD—ZAPATA
O. W. Killiam 5 60
O. W. Killam 7 100

Wells completed 28
Dry and abandoned 11
Oil wells completed 11
Gas wells completed 6
Oil producion 3945
JOE BRUNER FIELD
Date Oil Co. 1 ..... abd
Shell Petroleum 1 1000
Shell Petroleum 2 1000
Cranfil & Reynolds 1 105
M. K. Towns 1 200
United North & South 1 ..... abd
The Texas Company 2 1460
Sun Oil Co. 2 ..... abd
Lutex Oil Inc. 3 ..... abd
Cranfil & Reynolds 2 200
Larson-Walsh 1 100
Golden West Oil 4 400
T. C. Hadley 2 ..... abd
Hadley Oil Co. 1 (loc)..... abd
Hadley Oil Co. 2 (loc) ..... abd
Hadley Oil Co. 3 (loc) ..... abd
Hadley Oil Co. 4 (loc) ..... abd
T. C. Hadley 1 ..... abd

Wells completed 18
Dry and abandoned 10
Oil wells completed 8
Total production 4465
LULING FIELD
M. K. Koening 7 25
Magnolia Petroleum 7 25
Magnolia Petroleum 24 47

Wells completed 3
Oil wells completed 3
Total oil production 97
AGUA DULCE FIELD
Houston Oil Co. 2 (loc) ..... abd
Alexander et al 1 ..... abd
Agua Dulce Oil & Gac 1 ..... gas

Wells completed 3
Gassers completed 1
SAXET FIELD
Saxet Gas Co. 4 ..... gas
REFUGIO FIELD
William F. Morgan 1 ..... abd
Houston Oil Co. 11..... gas
W. L. Pearson 1 ..... abd
Benedum & Trees 2 125
Houston Oil Co. 10 ..... gas
Houston Oil Co. 9 ..... gas
Rutherford-Pearson 1 ..... abd

Wells completed 7
Oil wells completed 1
Gas wells completed 3
Dry and abandoned 3
Total oil production 125
MISCELLANEOUS
Bastrop County—
Gulf Production, Beel 1 ..... abd
Cranfil & Reynolds, Yost 2 250
Bexar County—
Humble Oil & Ref. Oppenheimer 1 .... abd
F. H. Eckert, Do rowiski 2 5
Caldwell County—
Humble Oil & Refining ..... abd
The Texas Company, Lackey ..... abd
Crenshaw Oil & Drlg Co. Jolly 1 ..... abd
Bartlett Bros., Martindale 1 ..... abd
Dimmitt County—
G. W. Morgan, City Nat'l Bank 3..... abd
Gonzales County—
Texas Company, Thornton 1 ..... abd
Texas Company, Bateman 2 ..... abd
Texas Company, Bateman 3 ..... abd
Empire Gas & Fuel, Norwood 1 425
Jackson County—
Wright Bros., Lee 1 ..... gas
Wright Bros., Drushell A-7 ..... gas
Jim Wells County—
Cushing Oil & Gas, Perez 2 ..... abd
Karnes County—
Frank M. Swacker, Butler 1 ..... abd
Medina County—
Ferguson et al, Odom 1 ..... abd
Milton & Webster, Crabtree 1 ..... abd
W. T. Richardson, Bendele 1 ..... abd
W. R. Painter, Muennink 1 4
Medina Oil Co., Taylor 1 ..... abd
Holt & Cromwell, Batot 1 ..... abd
Nueces County—
Kieth & Kaye, Gingrich 1 ..... abd
San Patricio County—
F. P. Zoch, Andrews 1 ..... abd
R. D. Kelly, Smith 1 ..... abd
Uvalde County—
Pure Oil Co., Smythe 1 ..... abd
Zavala County—
Ike T. Pryor, Fee 1 ..... abd

Wells completed 28
Dry and abandoned 22
Oil wells completed 4
Gas wells completed 2
Oil production 684
Gas production 30,000,000
Total gas production for dist 423,000,000

GULF COAST FIELDS

Summary of Field Operations
Texas

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl
Barbers Hill	3	15	2	0	2	7	9
Batson	1	2	0	0	0	3	3
Big Creek	4	1,758	0	0	0	1	1
Blue Ridge	11	4,325	5	0	0	6	6
Boling	9	4,264	4	0	3	9	12
Damon Mound	0	0	0	0	0	1	1
DeWalt	1	0	1	0	0	4	4
Goose Creek	3	93	0	0	0	4	4
High Island	1	2,000	0	0	0	2	2
Hull	6	900	1	0	0	7	7
Humble	3	1,415	1	0	0	2	2
Liberty	16	5,055	4	0	3	10	12
Markham	2	93	1	0	0	1	1
Nash	0	0	0	0	0	3	3
No. Dayton	0	0	0	0	0	1	1
Orchard	2	0	2	0	0	2	2
Orange	2	8	1	0	0	3	3
Pierce Junction	5	9,800	2	0	0	9	9
Raccoon Bend	2	2,700	0	0	1	6	7
Saratoga	2	20	2	0	0	6	6
Sour Lake	3	16	1	0	0	2	2
Spindletop	11	3,575	4	0	1	14	15
W. Columbia	0	0	0	0	0	0	0
Miscellaneous	14	55	11	1	2	29	31
Total Dec.	102	36,094	42	1	12	126	138
Total Nov.	91	27,616	38	2	21	145	166
Difference	11	8,478	4	1	9	19	28

South Louisiana

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl
Anse La Butte	0	0	0	0	0	1	1
Bayou Boullion	1	198	0	0	0	4	4
Edgerly	3	240	0	0	0	3	3
Hackberry	5	1,240	3	0	0	5	5
Jennings	4	130	2	0	0	6	6

Lockport	2	400	1	0	0	6	6
Sorrento	1	1,400	0	0	0	1	1
Starks	1	0	1	0	0	2	2
Sulphur	2	3,500	0	0	1	5	6
Sweet Lake	0	0	0	0	0	2	2
Vinton	2	315	0	0	0	2	2
Miscellaneous	6	0	6	0	1	16	17
Total Dec.	27	7,423	13	0	2	53	55
Total Nov.	30	5,732	19	0	10	59	69
Difference	3	1,691	6	0	8	6	14
Gulf Coast.	129	43,517	55	1	14	179	193
Total last month	121	33,348	57	2	31	204	235
Difference	8	10,169	2	1	17	25	42

WELLS COMPLETED

BARBERS HILL—CHAMBERS COUNTY

Higgins, Humphreys Corp. 1 ..... abd
Barber, Humphreys Corp. 3-A ..... abd
Richardson, Yount Lee Oil Co. 1 15

Wells completed 3
Production 15
Abandoned 2

BATSON—HARDIN COUNTY

Paraffine, Paraffine Oil Co. 79 2

BIG CREEK—FORT BEND COUNTY

Davis, Gulf Production Co. 14 1400
Davis, Gulf Production Co. 42 175
Davis, Gulf Production Co. 50 150
Davis, Navarro Oil Co. 2 33

Wells completed 4
Production 1758

BLUE RIDGE—FORT BEND COUNTY

Blakely, Gordon & Sharp 5-C ..... abd
Invincible, Gulf Production Co. 4 1925
Invincible, Gulf Production Co. 5 425
West-Schenck, Moody Corp. 4 450
Robinson, Navarro Oil Co. 7-A ..... abd
Robinson, Navarro Oil Co. 8-A ..... abd
Lee, South Texas Petroleum Co. 1 250
Davison, South Texas Petroleum Co. 4 .. 75
Lafferty, South Texas Petroleum Co. 4 .. 1200
Blakely, Watts Oil Co. 9 ..... abd
Scott, Watts Oil Co. 3 ..... abd

Wells completed 11
Production 4325
Abandoned 5

BOLING—WHARTON AND FORT BEND

Bernard, Bassett Miles et al 1 ..... abd
Kostelnik, Gayle & Heine 4 ..... abd
Waytek, Gayle & Heine 9 15
Farmer (E. C.), Gulf Prod. Co. 2 ..... abd
McCarson, Gulf Production Co. 8 5
Banker, Gulf Production Co. 4 35
Farmer (E. C.), Sun Oil Co. ..... abd
Taylor, The Texas Company 12-A 4200
Taylor, The Texas Company 2-B ..... abd

Wells completed 9
Production 4264
Abandoned 4

DEWALT—FORT BEND COUNTY

Deatherage, Humble Oil & Ref. Co. 1 ... abd

GOOSE CREEK—HARRIS COUNTY

Stateland Producers, Gulf Prod. Co. 12 .. 50
Tabb, Gulf Prod. Co. 17-A 35
Hughes, Humble Oil & Ref. Co. 6 8

Wells completed 3
Production 93

HIGH ISLAND—GALVESTON COUNTY

Cade, McLean Oil Co. 12 2000

HULL—LIBERTY COUNTY

Phoenix, Gulf Production Co. 23 ..... abd
Phoenix, Gulf Prod. Co. 50 200
Dolbear, Republic Production Co. 22 .. 500
Dolbear, Republic Production Co. 96 .. 30
Dolbear, Republic Production Co. 102 .. 100
Dolbear, Republic Production Co. 106 .. 70

Wells completed 6
Production 900
Abandoned 1

HUMBLE—HARRIS COUNTY

Fee, T. W. Horn 31 15
Williams, Radiance Oil Co. 1 ..... abd
Koehler, The Texas Company 24 1400

Wells completed 3
Production 1415
Abandoned 1

LIBERTY—LIBERTY COUNTY

Chambers, Gulf Production Co. 2 127
Chambers, Gulf Production Co. 3 132
Chambers, Gulf Production Co. 4 ..... abd
Chambers, Gulf Production Co. 6 ..... abd
Welder, Humble Oil & Refining Co. 9 .. 100
Mitchell, Sun Oil Co. 11 ..... abd
Mitchell, Sun Oil Co. 15 1200
Mitchell, Sun Oil Co. 16 450
Mitchell, Sun Oil Co. 17 250
Mitchell, Sun Oil Co. 18 30
Mitchell, Sun Oil Co. 20 700
Mitchell, Sun Oil Co. 23 1500
Staltl, The Texas Company 7 100
Staltl, The Texas Company 15 50
Staltl, The Texas Company 16 ..... abd
Mitchell, Yount Lee Oil Co. 400

Wells completed 16
Production 5055
Abandoned 4

MARKHAM—MATAGORDA COUNTY

Meyers, Hamil Drilling Co. 1 93
Hudson, Rycade Oil Corp.-Humble Oil & Refining Co. 2 ..... abd

Wells completed 2
Production 93
Abandoned 1

PIERCE JUNCTION—HARRIS COUNTY

Taylor, Gulf Production Co. 26 ..... abd
Whitehead, Moody Corp 3-B 1800
Fee, Rio Bravo Oil Co. 9 ..... abd
Settegast, Rio Bravo Oil Co. 10-B 1000
Settegast, Rio Bravo Oil Co. 11-A 4000

Wells completed 5
Production 9800
Abandoned 2

SARATOGA—HARDIN COUNTY

Teel, Rio Bravo Oil Co. 28 ..... abd
Sessler, E. W. Skinner 1 ..... abd
Hooks, Weldon Oil Co. 9 20

Wells completed 3
Production 20
Abandoned 2

SOUR LAKE—HARDIN COUNTY

Fee, Lakeview Oil Co. 58 ..... abd
Fee, Lakeview Oil Co. 59 8
Fee, Minor Oil Co. 84 8

Wells completed 3
Production 16
Abandoned 1

SPINDLETOP—JEFFERSON COUNTY

Rush, L. A. Painter 3 ..... abd
Gladys City, The Texas Company 1 .. 150
Gladys City, Unity Petroleum Co. 11 .... abd
Gladys City, Yount Lee Oil Co. 16 ..... abd
Gladys City, Yount Lee Oil Co. 70 150
Gladys City, Yount Lee Oil Co. 71 35
McFaddin, Yount Lee Oil Co. 56 1000
McFaddin, Yount Lee Oil Co. 85 600
McFaddin, Yount Lee Oil Co. 86 ..... abd
McFaddin, Yount Lee Oil Co. 87 1140
Fee, Yount Lee Oil Co. 11 500

Wells completed 11
Production 3575
Abandoned 4

ORANGE—ORANGE COUNTY

Leon, Sinclair Oil & Gas Co. 5 ..... abd
Gunstream, Sun Oil Co. 4 8

Wells completed 2
Production 8
Abandoned 1

ORCHARD—FORT BEND COUNTY

Moore, Gulf Production Co. 11 ..... abd
Moore, Gulf Production Co. 17 ..... abd

Wells completed 2
Production 6
Abandoned 2

RACCOON BEND—AUSTIN COUNTY

Grawunder, Humble Oil & Refg. Co.-Valley Oil Corp. 1-B 1500
Bracey, Humble Oil & Refg. Co.-Valley Oil Corp. 1-B 1200

Wells completed 2
Production 2700
Dry or gas 0

MISCELLANEOUS

Austin County—
San Felipe—Jackson, Gulf Prod. Co. 1 .. abd
Brazoria County—
Stratton Ridge—Tolar-Dannenbaum, Bartell et al 8 ..... abd
Brock, Empire Gas & Fuel Co. 1 .... abd
Colorado County—
Brune, Rich Oil Corp. 1 ..... abd
Hoyo, The Texas Company 1 ..... abd
Fort Bend County—
Armstrong, J. H. Diehl 1 ..... abd
Long Point—Wolf, Gulf Prod. Co. 13 50
Harris County—
Lenz, Braisn et al 1 ..... abd
Dunks, Hamilton Oil Co. 1 ..... abd
Jefferson County—
Johns, Gaddy Oil Co. 1 ..... abd
Jackson County—
Lawrence, Wright & Douglas 1 ..... abd
Lee, Wright Brothers 1 ..... gas
Jasper County—
Mills, Mark Kleedon 1 5
Liberty County—
Finley, Big Dome Interests 2 ..... abd

Wells completed 14
Production 55
Gas 1
Abandoned 11

SOUTH LOUISIANA
WELLS COMPLETED

BAYOU BOUILLON—ST. MARTIN PARISH

Bouillon, Rycade Oil Corp. 4 198

EDGERLY—CALCASIEU PARISH

Lillard, C. M. Crotty 13 10
Moore, Green Oil Co. 9 30
Hunter, Rex Petroleum Co. 8 200

Wells completed 3
Production 240
Abandoned 0

HACKBERRY—CAMERON PARISH

Valery, Calcasieu Oil Co. 4 ..... abd
Watkins, Calcasieu Oil Co. 12 940
Dahon, Cameron Oil Co. 2 300
Kelso Bayou, Yount Lee Oil Co. 15 .... abd
State Land, Yount Lee Oil Co. 22 ..... abd

Wells completed 5
Production 1240
Abandoned 3

JENNINGS—ACADIA PARISH

Conklin, Cline, Smith & Cline 8 30
Donnely, Cranfill & Reynolds 1 ..... abd
Leckelt, Gulf Refining Co. 2 ..... abd
Haywood Bros. Port City Oil Co. 10 100

Wells completed 4
Production 130
Abandoned 2

LOCKPORT—CALCASIEU PARISH

Miller, Vacuum-Gulf 20 ..... gas
Miller, Vacuum-Gulf 21 400

Wells completed 2
Production 400
Gas 1

SORRENTO—ASCENSION PARISH

United Land Co., Gulf Refining Co. 12 .. 1400

STARKS—CALCASIEU PARISH

Industrial, Gulf Refining Co. 12 ..... abd

SULPHUR—CALCASIEU PARISH

Fee, Union Sulphur Co. 731 1700
Fee, Union Sulphur Co. 734 1800

Wells completed 2
Production 3500

SWEET LAKE—CAMERON PARISH

Yount Lee, Pure Oil Co. 6 ..... abd

VINTON—CALCASIEU PARISH

Rescue, Vinton Petroleum Co. 8 250
Harmony, Vinton Petroleum Co. 15 65

Wells completed 2
Production 315

MISCELLANEOUS

Calcasieu Parish—
Jones, Layhay et al 2 ..... abd
Iberia Parish—
Loreauville—State, Gulf Refg. Co. 7-Z. abd
Avery Island—Averys Island, La. Land & Explor. Co. 2 ..... abd
Iberville Parish—
Bayou Blue—Wilbert, Standard Oil Co. (La.) 1 ..... abd
Tangipahoa Parish—
Kent Realty Co., Kent Oil Co. 1-A ..... abd

Wells completed 5
Abandoned 5

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry*	Gas	Rigs	Drg.	Ttl.
Bienville	2	0	2	0	0	2	2
Bossier	5	0	4	1	3	4	7
Caddo	2	108	1	0	0	16	16
Catahoula	0	0	0	0	0	1	1
Claiborne	1	0	1	0	0	4	4
DeSoto	1	0	0	1	2	7	9
East Carroll	1	0	1	0	0	1	1
Franklin	0	0	0	0	0	1	1
Grant	0	0	0	0	1	0	1
LaSalle	1	0	1	0	0	3	3
Madison	0	0	0	0	0	1	1
Morehouse	4	0	0	4	4	2	6
Natchitoches	0	0	0	0	0	1	1
Ouachita	4	0	1	3	4	8	12
Rapides	0	0	0	0	0	2	2
Red River	1	25	0	0	0	2	2
Richland	5	0	2	2	1	5	6
Sabine	3	50	2	0	2	1	3
Tensas	0	0	0	0	0	1	1
Union	4	0	3	1	1	4	5
Webster	7	35	3	3	1	12	13
Total Dec.	41	218	22	15	19	78	97
Total Nov.	17	110	10	5	29	89	118
Difference	24	108	12	10	10	11	21

*Gas production: Bossier Parish, 6,000,000; DeSoto, 1,000,000; Morehouse, 69,000,000; Ouachita, 5,250,000; Richland, 23,000,000; Union, 12,000,000; Webster, 40,416,000; total, 156,666,000 feet.

WELLS COMPLETED

BIENVILLE PARISH

16-16-10 State, Baca Drilling Co. 1 ..... abd
1-15- 8 L. A., S. P. Borden 3 ..... dry

BOSSIER PARISH

5-22-11 Wilkinson, Arkansas Natural Gas Co. 1 ..... dry
16-17-11 Jones, Barnett & Morgan 1 ..... dry
26-19-11 Smith, Morgan Oil Co. 2 ..... dry
9-20-13 Bulkley, Triangle Drilling Co. 1 ..... dry
36-16-12 Whitehurst, Woodley Petroleum Co. 2 ..... gas

Gas production 6,000,000

CADDO PARISH

7-20-15 Levee Board, Magnolia Petroleum Co. 3 80
23-21-15 Robertshaw, Magnolia Petroleum Co. 23 28
23-19-16 McCrary, Tidal Oil Co. 1 ..... dry

Production 108

CLAIBORNE PARISH

29-22-6 Taylor, Conrad F. Leue 1 (loc) .. abd

DESOTO PARISH

13-12-12 Rambin, Louisiana Public Utilities Co. 1 ..... gas

Gas production 1,000,000

EAST CARROLL PARISH

21-19-11 Carroll Land Co., Palmer Corp. 1 ..... dry

LASALLE PARISH

12-10-1e Urania, Randall et al. 1 ..... dry

MOREHOUSE PARISH

9-20-4 Fee, Natural Gas Prod. Co. 1 ..... gas
34-22-4 Tensas, Natural Gas Prod. Co. 13 .. gas
22-20-4 Etheridge, Stovall Drilling Co. 1 .. gas
10-20-4 Wright, United Carbon Co. 1 ..... gas

Gas production 69,000,000

OUACHITA PARISH

30-19-4 Potts, Ark. Nat. Gas Corp. 1 ..... gas
48-18-4 Slagle, Jordan Drilling Co. 1 (drk) ..... abd
36-20-4 Millsaps, Magnolia Pet Co. 3 ..... gas
24-19-4 Slaughter United Consumers Gas & Producing Co. 2 ..... gas

Gas production 5,250,000

RED RIVER

12-14-11 Pierson, Rock Petroleum Co. 1 .. 25

RICHLAND PARISH

29-16-6 McCoy, Magnolia Pet. Co. 1 ..... gas
24-16-6 Taylor, Richland oper. Co. 1 .. gas
4-16-6 Alexander, Ruston Drilling Co. (loc) ..... abd
28-17-6 Etheridge, Ruston Drilling Co. 1 (loc) ..... abd
17-15-7 Buie, Wilson et al 1 (drk) ..... abd

Gas production 23,000,000

SABINE PARISH

17- 4-11 Pickering, W. G. Doerne 1 ..... dry
14- 7-14 Bowman-Hicks, R. L. Gay et al 2 50
28-10-13 Hamlin Estate, The Texas Company 1 ..... dry

UNION PARISH

23-23-1e Security Trust, Carter & Wingfield 3 ..... dry
18-23-1e United States, H. C. McDonald 1 ..... dry
17-20-4 Dawkins, Moody & Seagraves 1 ..... gas
14-23-2w Upshaw, R. W. Rhodes 1 (drk) ..... abd

Gas Production 12,000,000

WEBSTER PARISH

7-22- 9 Martin, Virgil Helm 1 ..... gas
5-22- 9 W. P. Bond, Magnolia Petroleum Co. 1 ..... gas
33-23-11 Pine Woods, Northwest Louisiana Gas Co. 7 35
34-23-11 Pine Woods, Northwest Louisiana Gas Co. 8 ..... dry
30-23- 9 Haynes, Ohio Oil Co. 1 ..... dry
21-21-10 McCook & Hibbler, Superior Oil Co. 1 ..... gas
22-21-10 Duhe, Woodley Petroleum Co. 2 (drk) ..... abd

Wells completed 7
Production 35
Gas 3
Gas production 40,416,000
Dry 3

ARKANSAS

Summary of Field Operations

	Comp.	Prod.	Dry*	Gas	Rigs	Drg.	Ttl.
Ashley	1	0	1	0	1	2	3
Bradley	0	0	0	0	0	1	1
Calhoun	0	0	0	0	0	1	1
Chicot	1	0	1	0	0	2	2
Clark	1	0	1	0	0	1	1
Clay	0	0	0	0	0	1	1
Columbia	0	0	0	0	1	3	4
Faulkner	0	0	0	0	0	1	1
Franklin	1	0	1	0	1	0	1
Garland	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	1	1
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	2	2
Miller	0	0	0	0	0	1	1
Nevada	1	0	0	0	0	2	2
Ouachita	1	30	0	0	2	2	4
Union	15	3,710	7	0	14	33	47
Total Dec.	22	3,805	11	0	19	59	78
Total Nov.	14	1,445	4	3	19	58	77
Difference	8	2,360	7	3	0	1	1

*Gas production: Union County, 7,000,000.

WELLS COMPLETED

ASHLEY COUNTY

28-16-8 Moffatt, Atlantic Oil Producing No. 1 ..... dry

CHICOT COUNTY

19-18-2w Sawyer, S. D. Hunter 1 ..... dry

CLARK COUNTY

9-11-19 Eakin, McKenzie Oil Co. 1 ..... dry

FRANKLN COUNTY

16-8-27 O'Neal, Ozark Nat. Gas Co. 5 .... dry

NEVADA COUNTY

1-14-21 Groves, Humble O. & R. Co. C-5 .. 41
6-14-20 Haynie, Humble O. & R. Co. 1 31

OUACHITA COUNTY

23-15-16 Primm, J. E. Crosbie 2 91

UNION COUNTY

16-17-14 Hicks, Gilliland Oil Co. 1 (drk) abd
16-17-14 Ed Doss, Root Ref. Inc. 1 (drk) abd
16-17-14 Hicks, Hollifield & McFarlane 1 ..... dry
26-17-16 Goodwin, Imperial Oil & Gas Products Co. 1 ..... dry
10-17-14 E. F. Gregory, E. C. Johnson, Tr 3 (drk) ..... abd
6-17-13 Nash, Lion Oil Ref. Co. 3 730
6-17-13 C. B. Nash, Ohio Oil Co., 1 Acct. 2 1,050
15-17-14 Rowland, Lion Oil Ref. Co. 2 .. 31
15-17-14 Rowland, Lion Oil Ref. Co. 5 .. 100
7-17-13 El Dorado Realty Co. Magna Production Co. 1 160
7-17-13 Sample, Marine Oil Co. 1 150
6-17-13 C. L. Frazier, Ohio Oil Co. 1 .... dry
6-17-13 Nash, Ohio Oil Co. 3, Acct 1 1,500
21-17-14 Mullins, Root Ref., Inc. 1 10
16-17-14 Moody, The Texas Company 1 (drk) ..... abd

Wells completed 15
Production 3,710
Gas production 7,000,000
Dry 7

KENTUCKY-TENNESSEE

KENTUCKY

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	2	5	1	0	0	4	4
Allen	10	34	5	0	0	8	8
Barren	3	23	0	0	0	5	5
Ohio	49	953	11	4	4	64	68
Daviess	45	875	20	1	6	42	48
Hancock	1	0	1	0	1	5	6
McLean	1	0	1	0	0	4	4
Henderson-Union	1	15	0	0	0	10	10
Webster	0	0	0	0	0	2	2
Muhlenburg	0	0	0	0	0	2	2
Breckenridge	5	40	1	0	0	2	3
Butler	0	0	0	0	1	4	5
Hopkins	0	0	0	0	0	9	9
Meade	0	0	0	0	1	1	2
Caldwell	0	0	0	0	0	1	1
Trigg	0	0	0	0	0	1	1
Cumberland-Monroe	1	0	1	0	0	0	0
Hardin	0	0	0	0	0	1	1
Christian	0	0	0	0	2	2	5
Wayne	0	0	0	0	0	7	7
Powell	0	0	0	0	0	1	1
Estill	5	6	1	0	0	4	4
Lee-Owsley	1	0	0	1	0	1	1
Wolfe	0	0	0	0	0	1	1
Morgan	1	0	1	0	0	0	0
Lawrence-Johnson	0	0	0	0	0	2	2
Johnson-Magoffin	2	29	0	0	1	3	4
Floyd-Knott	0	0	0	0	0	1	1
Clay	0	0	0	0	0	2	2
Knox	1	0	1	0	0	2	2
Total Dec.	128	1,990	44	6	17	190	207
Total Nov.	144	1,919	48	6	15	184	199
Difference	16	71	4	2	2	6	8

TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clay	1	0	0	1	2	13	15
Jackson	0	0	0	0	0	3	3
Marshall	0	0	0	0	1	0	1
Decatur	0	0	0	0	1	0	1
Total Dec.	1	0	0	1	4	15	19
Total Nov.	3	390	0	0	4	16	20
Difference	2	390	0	1	0	1	1

KENTUCKY
WELLS COMPLETED
WARREN COUNTY

Bowling Green—Tom McGinnis, Wm. Gittings 5 5
J. L. Jenkins, Johnson & Julian 14 .. dry

Wells completed 2
Production 5
Dry 1

ALLEN COUNTY

Scottsville—E. H. Woods, Mid-Southern Oil 26 3
W. H. Woods, Mid-Southern Oil 27 .. dry
J. D. Starks, S. T. Strum & Co. 1 .... dry
Frank Stovall, S. T. Strum & Co. 2 .. 1
T. J. Oliver, Snowden-McSweeney 32 .. 2
T. J. Oliver, Snowden-McSweeney 33 .. 3
J. L. Grubbs, Rehr & Ogle 16, 17 .... dry
J. B. Williams, J. D. White 9 ..... dry
Lunchford Beam, E. D. Defenbaugh 1 .. 25

Wells completed 10
Production 34
Dry 5

BARREN COUNTY

Glasgow—T. Mansfield, Ziegler Bros. 23. 10
Glass, Esslinger Oil 17 15

F. Moore, Fred Moore 15 8

Wells completed 3
Production 33

OHIO COUNTY

Hartford—B. L. Gossett, J. C. Ellis 9.. 50
Mary Cundiff, J. C. Ellis 6 50
C. R. Keith, J. C. Ellis 9 15
Ira Moseley, J. C. Ellis 2 20
E. L. Patton, Ohio Oil 3 10
E. L. Patton, Ohio Oil 4 10
S. L. Phillips, Ohio Oil Co. 3 10
J. C. Ellis, Ohio Oil 19 30
John Mattox, Wood Oil 5 75
John Mattox, Wood Oil 6 60
Rogers, Wood Oil 1 35
R. A. Duke, Wood Oil 4 30
R. A. Duke, Wood Oil 5 60
Jos. Griffith, Wood Oil 2 ..... gas
Mrs. Royal, New Domain Oil & Gas 1 35
Mrs. Royal, New Domain Oil & Gas 2 35
Mrs. Royal, New Domain Oil & Gas 3 gas
H. Monroe, H. L. Miller & Co. 1..... dry
First Nat. Bank, Penn-Indiana. Oil 2 15
Mose Wells, Wiser Oil 1 ..... dry
Reynolds, Claypool & Co. 2 ..... dry
J. B. Harrison, Claypool & Co. 1..... gas
J. L & J. H. Ralph, Claypool & Co. 8 15
B. Hamilton 100-a, Union Trust & Co. 11 20
B. Hamilton, 100-a, Union Trust & Co. 12 15
B. Hamilton 100-a, Union Trust & Co. 13 20
E. L. Patton, Ray Bigler & Co. 1..... 10
Ed. Hendricks, Bigler & Becker 6..... 40
Friendship Church, F. M. Sirman 1.. 25
Ada Kelley, White Plains O. & G. 7.. 30
Howard Heirs, White Plains O. & G. 11. 60
J. J. Midkiff, White Plains O. & G. 11. 5
S. E. Edge, Walter Chenault & Co. 1. dry
Geo. Muffett, K. M. Dole & Co. 1.... gas
F. M. Brandon, Chester Oil 1 15
F. M. Brandon, Chester Oil 2 10
Zach King, Chester Oil 1 10
Oller, H. L. Miller & Co. 1..... dry
Sam Davison, Lincoln Oil Prod. 1..... dry
J. W. Whittaker, French Carpenter & Co. 4 50
J. W. Whittaker, French Carpenter & Co. 5 ..... dry
Wm. Coleman, H. B. Bastrus 4 ..... dry
Ira Howard, Creek Drilling 1..... dry
R. L. Ambrose, Whitehill & Reich, 3... 10
Cora Wells, Mecca Oil 18 50
Brown Heirs, National Deposit Bank 3 dry
P. R. Kelley, National Deposit Bank 1 dry
L. C. McKinley, Leeper Oil 4 25
A. F. Belamy, S. H. Russell & Co. 3 .. 3

Wells completed 49
Production 953
Dry 11
Gas 4

DAVIESS COUNTY

Owensboro—Jim Howard, Creek Drilling 2 140
Oscar Wells, Smith, Randolph & Co. 5 80
Pete Mahloskey, Leeper Oil & Co. 7.. 20
Salem Davis, C. E. Daugherty & Co. 2 8
Wm. Riddle, Young, Goldburg & Co. 1 dry
Chas. Gilmore, Kenrock Oil 1 ..... dry
G. A. Weller, Ohio Oil 2 ..... dry
G. A. Weller, Ohio Oil 3 5
G. R. Ruby, Ohio Oil 2 ..... dry
Lawrence Roby, Ohio Oil 12 30
K. N. Yeiser, L. C. Young 5 25
Dr. J. N. Fireline, Robbins & Stimson 2 8
Wm. Richardson, Pratt Bros. 1 .... dry
Emmett Burton, Daley & Lowman 2.. 60
C. M. Jones, Jetson Oil 6 ..... dry
Jim Rayden, Imperial O. & G. 4 20
Irwin & Slagle, D. C. Stimson & Co. 5 12
E. L. Burns, The Pet. Co. 6 35
E. L. Burns, The Pet. Co. 7 20
E. L. Burns, The Pet. Co. 8 60
T. B. Trodgen, Evans & Garrison 2.. dry
R. T. Sands, Wood Oil 1 10
W. M. Tanner, Wood Oil 1 ..... dry
Sanford Miller, H. C. Smith Drlg. 1.. dry
Marion Taylor, Toys Development 1.. 60
Bob Mayfield, French & Carpenter 1 dry
E. L. Baird, Wade & Moore 1 60
C. Sharp, Imperial O. & G. Prod. 1.. dry
L. R. Howard, M. B. French & Co. 3.. 55
L. R. Howard, M. B. French & Co. 4, 5 dry
Frank Fuqua, Gray & Havens 2 ..... dry
S. E. Easton, Cumberland Pet. 1 60
Ira Bryant, Mecca Oil 1 ..... dry
Widow McCandless, Wm. Stevenson 1. dry
J. L. Park, L. C. Young 4 12
Lindsay Purcell, Goldburg, Young & Co. 2 5
A. Feldpausch, Ray Young & Co. 2.... 30
Cody Hoover, Wade & Moore 1 25
W. S. Hinton, Jetson Oil 1 35
Arthur Gilmour, Maxey, Lewis & Co. 1 dry
Sharp, Huff & Calderwood 1 ..... dry
J. L. Mays, Johnson & Young 1 ..... dry
W. S. Hinton, M. B. French & Co. 3.. gas
C. H. Veach, Leeper Oil 4 ..... dry

Wells completed 45
Production 875
Dry 20
Gas 1

HANCOCK COUNTY

Pellville—Matthews, Leeper Oil 1 ..... dry

McLEAN COUNTY

Calhoun—Shacklett, Swiss Oil Corp. 1 dry

HENDERSON—UNION COUNTIES

Geneva—Wilson, Unknown 1 15

BRECKENRIDGE COUNTY

Glendaen—Glen Moorman, Hoosier Oil & Gas 10
Glen Moorman, Hoosier Oil & Gas 5.. 10
Glen Moorman, Hoosier Oil & Gas 6.. 10
Glen Moorman, Hoosier Oil & Gas 7.. 10
Unknown, Hood & Co. 1 ..... dry

Wells completed 5
Production 40
Dry 1

ESTILL COUNTY

District 7—Clayburn Tipton, Superior Oil Corp. 13 1
District 8—Thos. Henderson, Superior Oil Corp. 28 2
A. F. West & Co., Superior Oil Corp 22 2
J. A. Wallace, Snowden & Co. 3..... dry
District 10—Wm. Cox, A. J. Calvert 10.. 1

Wells completed 5
Production 6
Dry 1

LEE-OWSLEY COUNTIES

District 13—A. Marcum, Pet. Expl. 1.... gas

MORGAN COUNTY

District 6—W. L. Wright, Pet. Expl. 1.. dry

JOHNSON-MAGOFFIN COUNTIES

District 2—Milt Tackett, Hamlin-Tanner Oil 3 4
District 31—B. F. Whitt, Hupp & Duff 10 25

Wells completed 2
Production 29

KNOX COUNTY

Sinking Creek—Fee, Foreman Co. 1 .... dry

TENNESSEE

WELLS COMPLETED
CLAY COUNTY

Celina—Mitchell Creek-Kyle, Chas. Graff 1 ..... gas

MISSISSIPPI

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Alcorn	0	1	1
Calhoun	0	1	1
Chickasaw	0	1	1
Claiborne	0	2	2
Hines	0	1	1
Itawamba	1	0	1
Jackson	0	1	1
Jasper	0	1	1
Lauderdale	1	0	1
Lee	0	1	1
Monroe	0	7	7
Rankin	0	1	1
Sharkey	1	0	1
Simpson	0	1	1
Stone	0	1	1
Washington	0	1	1
Webster	0	1	1
Total December	3	21	24
Total November	0	22	22
Difference	3	1	2

ALABAMA

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Houston	0	1	1
Lawrence	0	2	2
Marion	0	1	1
Washington	0	2	2
Total December	0	6	6
Total November	0	5	5
Difference	0	1	1

ROCKY MOUNTAIN AREA

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Bent	0	0	0	0	2	2	2
Fremont	6	120	4	0	3	15	18
Huerfano	0	0	0	0	0	2	2
Jackson	0	0	0	0	0	6	6
La Plata	0	0	0	0	0	3	3
Larimer	3	123	2	0	1	7	8
Las Animas	0	0	0	0	1	2	3
Moffat	1	0	1	0	5	8	13
Routt	1	10	0	0	2	8	10
Miscellaneous	0	0	0	0	0	24	24
Total Dec.	11	253	7	0	12	77	89
Total Nov.	9	302	3	0	11	78	89
Difference	2	649	4	0	1	1	0

UTAH

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Box Elder	0	0	0	0	0	3	3
Grand	2	0	1	0	0	8	8
San Juan	0	0	0	0	1	2	3
Uinta	0	0	0	0	1	6	7
Washington	0	0	0	0	0	7	7
Miscellaneous	0	0	0	0	1	6	7
Total Dec.	2	0	1	1	3	32	35
Total Nov.	0	0	0	0	4	31	35
Difference	2	0	1	1	1	1	0

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Chaves	0	0	0	0	3	3	3
De Baca	0	0	0	0	0	3	3
Eddy	0	0	0	0	4	4	8
Guadalupe	0	0	0	0	0	2	2
Lea	4	700	3	0	7	23	30
McKinley	3	0	3	0	0	9	9
Roosevelt	0	0	0	0	3	0	3
San Juan	2	0	1	1	3	17	20
San Miguel	0	0	0	0	1	3	4
Torrance	0	0	0	0	1	5	6
Miscellaneous	0	0	0	0	0	10	10
Total Dec.	9	700	7	1	19	79	98
Total Nov.	5	200	4	0	17	80	97
Difference	4	500	3	1	2	1	1

MONTANA

Summary of Field Operations

District— County	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Cat Creek	4	50	3	0	0	3	3
Kevin-Sunburst	9	790	3	1	9	14	23
Pondera	22	1,110	4	0	6	36	42
Misc.	10	20	4	5	7	64	71
Total Dec.	45	1,970	14	6	22	117	139
Total Nov.	40	1,433	7	6	28	111	139
Difference	5	537	7	0	6	6	0

WYOMING

Summary of Field Operations

District or County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Salt Creek	4	344	0	0	3	5	8
Big Horn	2	0	1	1	1	12	13
Carbon	1	0	0	1	0	14	14
Fremont	1	0	0	1	3	9	12
Hot Springs	0	0	0	0	1	3	4
Johnson	0	0	0	0	1	3	4
Lincoln	1	0	1	0	2	4	6
Natrona (ex. Salt C.)	0	0	0	0	5	2	7
Niobrara	1	0	0	1	2	4	6
Park	3	685	1	0	5	32	37
Sweetwater	0	0	0	0	2	10	12
Sublet	3	123	0	0	1	23	24
Weston	0	0	0	0	1	2	3
Uinta	0	0	0	0	5	10	15
Miscellaneous	1	0	1	0	1	8	9
Total Dec.	17	1,152	4	4	33	141	174
Total Nov.	17	3,869	5	1	32	146	178
Difference	0	2,717	1	3	1	5	4

COLORADO
WELLS COMPLETED

4-19-70 Morz, Paul C. Batis & Co. 1 .. dry
22-20-69 Marjo, Continental Oil 4 110
35-18-70 Poor Farm, Continental Oil 2. dry
5-20-69 Griffith, Caraway & Focken, 1-A ..... dry
3-19-70 Robinson, Wade Pet., Inc. 1 . dry
1-19-70 McKenzie, Continental Oil 2 .. 10
6- 9-68 Scott, Union Oil of Calif. 1 abd
6- 9-68 Scott, Union Oil of Calif. 3 .. 123
5- 8-69 Besaw, West Side Oil 1 ..... dry
14- 4-92 Milliken, Alliance Oil 1 ..... dry
18- 6-86 State-Oliver, Tex. Prod. 1 10

Wells completed 11
Production 253
Dry and abandoned 7

UTAH
WELLS COMPLETED

32-20-22 Urban-Terrill, C. A. Urban 1 . gas
13-20-21 Wegeman, Fred Engstrom 2 .. dry

Wells completed 2
Dry and abandoned 1
Gas 2,000,000

NEW MEXICO
WELLS COMPLETED

9-19-38 State, Midwest Ref. 1 700
29-13-37 Anderson, C. E. Reynolds Drlg. Co. 1 ..... abd
1-23-36 Danciger, Marland Prod. 1 ... dry
26-25-32 King, Marland Prod. 1 ..... dry
16-19-11 Three Ex-Soldier Drlg. 1 ..... abd
14-18-11 Branson, Kerns & Toler 2 .. dry
18-18-10 San Juan C. & O. 1 ..... dry
23-29-11 Abrams, Fidelity O. & R. 2 .. gas
25-17-16 Benedict-Wilson, Mark Bros. 1 dry

Wells completed 9
Production 700
Dry and abandoned 7
Gas 400,000

MONTANA
WELLS COMPLETED

31-15-30 NE. Maser et al ..... dry
27-16-26 SE. J. D. Wilson 2 ..... dry
21-16-30 SW. Canfield & Davis 4..... dry
Brown Lease, Continental Oil Co. ... 50
27-35- 3 Rock, Colonel-Kevin 5..... dry
36-34- 1 State, Hannah Porter 1 ..... dry
20-35- 1 Zacher, Marias River Synd. 5.. 300
5-34- 1 Maloney, Munger et al 1..... gas
10-35- 1 Kalispell-Kevin, P. M. K. Oils 11 25
24-35- 2 McKee, Smith-Bradford 2..... 15
28-35- 3 Thompson, R. C. Tarrant 2.... dry
36-34- 1 State, Hannah-Porter 2..... 300
8-35- 2 McGowan, Day Oil Co. 6..... 100
14-27- 4 Hirsh erg, Texas Pacific 9 .. 20
15-27- 4 Kingsbury, Texas Prod. Co. 4.. 75
15-27- 4 Copley, Texas Prod. Co. 5.... 100
15-27- 4 State Bank, Rice & Burke 6.. 100
15-27- 4 Gjullin, Continental Dev. Co. 7 75
16-27- 4 State, Jones Oil Co. 1..... 75
14-27- 4 State, Midwest Refg. Co. 18 .. 65
15-27- 4 Bank, Midwest Refg. Co. 6.... 100
14-27- 4 Hirshberg, Texas Pacific 9.... 20
10-27- 4 Gjullin, Continental Dev. Co. 9 25
14-27- 4 Hirshberg, Texas Pacific 8.... 25
15-27- 4 Kingsbury, Calif. Pet. Corp. 7.. 25
15-27- 4 Kingsbury, Calif. Pet. Corp. 6.. 70
9-27- 4 Jones, Fulton Pet. Corp. 1.... 200
15-27- 4 Gjullin, Continental Dev. Co. 8 10
13-27- 4 O'Haire Synd. 1 ..... dry
16-27- 4 State, P. & R. Co. 4 70
15-27- 4 State Bank, Burke & Rice 5.. 25
1-27- 4 Miller, Hungerford et al 1.... dry
25-28- 4 Earhart, Dakota-Montana 1 .. dry
22-27- 4 Munson, Ohio Oil Co. 1 30
21-27- 4 Nat. Bank, Calif. Pet. 1 ..... dry
5-25- 1 Speer, Hardrock Oil Co. 3..... 20
14- 1-33 Big Horn O. & G. Co. 4..... gas
35-28- 3 Hover, Trapp Synd. 1 ..... dry
28-26- 3 Eyraud, Calif. Pet. 1 ..... dry
6-23- 1 Witham, Archer-Montana .... dry
26- 9-58 Gas Dev. Co. 27 ..... gas
30- 9-59 Gas Dev. Co. 28 ..... gas
25- 9-58 Gas Dev. Co. 30 ..... gas
23- 9-58 Gas Dev. Co. 31 ..... gas
27-22-15 SE, Claggett Dev. Co. 1..... dry

Wells completed 45
Production 1970
Dry 14
Gas 6

WYOMING
WELLS COMPLETED

24-40- 79 SW Wyoming Asso. 6 69
24-40- 79 SW Wyoming Asso. 18-SD-2 . 225
25-40- 79 SW Wyoming, Asso. 21 45
27-40- 79 NE Midwest Oil 24-LS 5
24-51- 93 Producers & Refiners 40 ..... dry
33-56- 97 Gross Gas, Ohio Oil 2 ..... gas
7-26- 89 Producers & Refiners 8 ..... gas
20-48- 82 Carter Oil 1 ..... dry
1-24-113 Fontenelle Oil 1 ..... abd
5-35- 65 Schuricht, Continental Oil 1. gas
33-51-100 Rousseau, Lenco Pet. 1 185
7-51-100 Klindt, Cody Pet. 5 500
29-48-103 Calif. Explin. 1-A ..... dry
3-26-113 Calif. Pet. Corp. 3-D 30
27-27-113 Calif. Pet. Corp. 3-B-2 13
34-27-113 Calif. Pet. Corp. 3-E 80
34-34- 92 Muskrat, Prod. & Refs. 1 .. gas

Wells completed 17
Production 1152
Gas 202,000,000
Dry and abandoned 4

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	11	67	3	3	7	14	21
Medina	4	0	2	2	1	5	6
Lorain	4	0	1	3	2	4	6
Wayne	6	0	2	4	5	9	14
Holmes	4	0	2	2	3	8	11
Cuyahoga	4	30	1	2	1	1	2
Richland	2	0	0	2	0	4	4
Knox	7	71	3	2	5	6	11
Coshocton	7	140	2	1	3	3	6
Ashtabula	1	0	0	1	0	0	0
Summitt	5	0	1	4	2	19	21
Licking	18	198	2	2	10	13	23
Muskingum	7	191	3	0	4	12	16
Athens	18	3	5	10	7	23	30
Meigs	9	22	1	4	4	13	17
Jackson	5	0	0	5	8	10	18
Vinton	2	7	0	1	1	1	2
Stark	0	0	0	0	1	1	2
Lawrence	1	0	0	1	1	2	3
Pickaway	0	0	0	0	0	1	1
Gallia	1	0	0	1	0	1	1
Tuscarawas	1	0	1	0	0	1	1
Fairfield	2	0	1	1	1	4	5
Guernsey	7	30	0	5	6	6	12
Total Dec.	126	759	32	56	72	161	233
Total Nov.	114	901	28	41	83	170	253
Difference	12	142	4	15	11	9	20

CENTRAL OHIO
WELLS COMPLETED
ASHLAND COUNTY

Hanover—R. P. Hazlet, Ohio Fuel Gas 1-3,303 ..... dry
Vermillion—L. C. Galloway, Ohio Fuel Gas 1-3,320 ..... gas
Marion Glass, Kemrow Co. 1..... dry
J. S. Moffett, L. D. Henderson 1..... dry
Orange—Nettie McFadden, Logan Gas 1-3,049 ..... dry
F. E. Keener, Logan Gas 1-3,048..... dry
Juliett McConnell, Ohio Fuel Gas 1-3,296 ..... gas
John T. Fluke, 13, Kemrow Co. 2.... gas
Perry—Eliza Duvall, Curtis & Co. 6 . 17
Riley, Donelson, Robison & Co. 5 .. 20
T. Smith, Miller & Co. 4..... 30

Wells completed 11
Production 67
Dry 5
Gas 3

MEDINA COUNTY

Hinckley—L. G. Collister, Ohio Fuel Gas 1-3,334 ..... gas
Barbara Hess, Hulse & Kundtz 1.... gas
Lafayette—Clara Simpson, Logan Gas 1-3,034 ..... dry
Medina Infirmary, Logan Gas 5-3,051 dry

Wells completed 4
Dry 2
Gas 2

LORAIN COUNTY

Eaton—John Cowley, Ohio Fuel Gas 1-3,318 ..... gas
Carlyale—Jas. Malik, Logan Gas 1-3,045 gas
Mary Schummelman, Daugherty & Co. 1 ..... gas
John Salet, Pittsfield Gas 1..... dry

Wells completed 4
Dry 1
Gas 3

WAYNE COUNTY

Congress—A. J. Ruse, Ohio Fuel Gas 2-3,319 ..... gas
Geo. B. Taber, Ohio Fuel Gas 2-3,30. gas
Sugar Creek—J. T. Schantz, Logan Gas 2-3,035 ..... gas
O. & I. Santmyer, Logan Gas 1-3,036 dry
Chester—J. W. Troxel, Logan Gas 2-3,052 ..... gas
W. N. Hileman, Harmon & George 2. dry

Wells completed 6
Dry 2
Gas 4

HOLMES COUNTY

Paint—E. M. Schlabach, Ohio Fuel Gas 1-3,311 ..... gas
Prairie—I. F. Snyder, Pure Oil 4..... dry
Knox—P. M. Young, I. E. O'Hail 3.... gas
Kilbuck—Chas. Hanna, Tatgenhorst & Aggins 1 ..... dry

Wells completed 4
Dry 2
Gas 2

CUYAHOGA COUNTY

Olmstead—J. Saunders, L. M. McGrath 1 ..... gas
Hattie A. Beck, John Arthur 1..... gas
Emily C. Belden, Goff Bros. 1..... dry
Strongville—G. Beriswell, Dillon & McFrederick 3 30

Wells completed 4
Production 30
Dry 1
Gas 2

RICHLAND COUNTY

Monroe—S. M. Douglas, Ohio Fuel Gas 2-3,209 ..... gas
Worthington—John Cates, Ohio Fuel Gas 1-548 ..... gas

Wells completed 2
Gas 2

KNOX COUNTY

Brown—J. A. Reed, Ohio Fuel Gas 3-3,215 ..... gas
G. P. Keppert, Ohio Fuel Gas 2-3,328 gas
Retta Switzer, Ohio Fuel Gas 1-3,275 dry
Jackson—F. Rinehart, Arkansas G. & F. 5 61
Jos. Beatty, Logan Gas 1..... 10
Howard—J. A. Greer, Ohio Fuel Gas 2-3,333 ..... dry
Monroe—S. G. Deeds, Upham Gas 1... dry

Wells completed 7
Production 71
Dry 3
Gas 2

COSHOCTON COUNTY

Monroe—Ella McKelvey, Ohio Fuel Gas 1-3,219 8
P. Shellhorn, Ohio Fuel Gas 1-3,266. gas
Chas. King, Logan Gas 1-3,027..... dry
Clark—Frank Mullett, Logan Gas 1-3,-044 ..... dry
Robt. Rhode, Ohio Oil 1..... 125
A. E. Eppley, Ohio Oil 1..... 2
A. I. Bucklew, Pure Oil 3..... 5

Wells completed 7
Production 140
Dry 2
Gas 1

ASHTABULA COUNTY

Conneaut—J. B. Ring, Shaffer Bros. Gas 1 ..... gas

SUMMITT COUNTY

Franklin—Luna Lake Club, East Ohio Gas 1 ..... gas
Isaac Host, F. A. Brendall & Co. 2.. dry
Richfield—Atha Drlg. Co., East Ohio Gas 2 ..... gas
Green—J. Boettler, F. A. Brendall & Co. 1 ..... gas
G. W. Crouse, G. W. Crouse 1..... gas

Wells completed 5
Dry 1
Gas 4

LICKING COUNTY

Fallsburg—Wayland Ashcraft, Preston Oil 1 3
N. E. Morris, Preston Oil 2 53
Jas. Chaney, Guy Shaffer 13 8
N. E. Morris, Preston Oil 3 15
J. E. Martin, Emerald Pet. 1 12
Bowling Green—Cath. Hupp, Ohio Fuel Gas 1-3,264 ..... gas
Perry—Jas. Wright, Preston Oil 9 6
James Wright, Preston Oil 10 10
Ollie Loar, Preston Oil 1 6
Albert Ashcraft, Whitehill Gas 7 11
Mary Ann—H. C. Farmer, H. C. Farmer 2 6
Newark—J. Zertman, Wehrle O. & G. 5 gas
Hanover—F. Claypool, Everette Gas 10 12
Hopewell—S. L. Burrier, Hope C. & R. 1 50
Licking—Wm. Wallace, Heisey Gas 2. dry
Jos. Davis hrs., Heisey Gas 6 ..... dry
Madison—G. H. Long, G. H. Long 5 ... 3
Franklin—Savailla Parr, Ralph Bros., Inc. 4 3

Wells completed 18
Production 198
Dry 2
Gas 2

MUSKINGUM COUNTY

Jackson—W. E. Helprey, Hope C. & R. 3 42
John Hoover, Pure Oil 3 12
Geo. W. Crawford, Pure Oil 4 ..... dry
Perry—Wm. Knight, Mid-East Oil 1 ... 87
Licking—Jos. Varner, Hope C. & R. 2. 50
Hopewell—Reason Bolin, Hope C. & R. 1 ..... dry
Clay—Ira Spring, Wm. Klin & Co. 1 ... dry

Wells completed 7
Production 191
Gas 3

ATHENS COUNTY

Ames—W. R. Phillips, Ohio Fuel Gas 2-3,288 ..... gas
J. E. Gifford, Ohio Fuel Gas 3-3,290. gas
Amos Linscott, Kiggins & Co. 1 ..... gas
Myrta Green, Orondoff & Co. 1 ..... gas
Lee—S. E. Searles, Logan Gas 2-3,039 .. gas
Carthage—L. M. Tedrow, Logan Gas 4-3,047 ..... dry
Trimble—Republic Coal, Ohio Fuel Gas 1-3,250 ..... dry
Athens—Athens State Hospital, Gross & Co. 9 ..... dry
Berne—Chas. E. Elliott, Ohio Fuel Gas 5-3,346 ..... gas
P. H. Walker, Ohio Fuel Gas 2-3,336 gas
Fannie Wells, Bailey O. & G. 3 ..... gas
W. R. Goddard, Chas. Fox 2 ..... dry
C. C. Curtis, Smith & Thomas 7 1
Lodi—State of Ohio, Ohio Fuel Gas 2-3,315 ..... gas
L. H. Blackwood, Stewart & Ross 3 gas
Cannan—Robt. Bean, Fox & Mosure 5. 1
Robt. Bean, Fox & Mosure 6 1
York—D. F. Shafer, Lewis, Ruff & Co. 1 ..... dry

Wells completed 18
Production 3
Dry 5
Gas 10

MEIGS COUNTY

Sutton—Ira S. Bartells, Bartin Oil 2.. gas
J. F. & A. B. Ham, Pure Oil 2 5
Henry C. Klein, Pure Oil 3 ..... gas
M. Ebersbach & Co., Tyree & Co. 1 .. 5
Jos. Stobart, Tyree & Co. 3 10
Lucius Holter, Bowman Run O. & G. 1 ..... gas
Scipo—Chas. Woodward, Lee Stout & Co. 1 ..... dry
Bedford—Herb. Barnhary, Ohio Fuel Gas 1-3,241 ..... gas
Salisbury—Crouse, Sutton Bros. 2 2

Wells completed 9
Production 22
Dry 1
Gas 4

JACKSON COUNTY

Franklin—W. S. McClure, Ohio Fuel Gas 1-3,313 ..... gas
J. E. Hines, Ohio Fuel Gas 2-3,331. gas
Milton—J. C. Washburn, Coon & Nichols 1 ..... gas
Lick—H. C. Jenkins, Wittmer O. & G. Prop. 1 ..... gas
Coal—Blanch E. Neary, Ohio Fuel Gas 1-3,282 ..... gas

Wells completed 5
Gas 5

VINTON COUNTY

Knox—Wm. Beckley, Co-Operative Oil 7 7
David Huston, Townsend & Co. 1 .... gas

Wells completed 2
Production 7
Gas 1

LAWRENCE COUNTY

Upper—Hecla I. & M., Indland Gas 1. gas

GALLIA COUNTY

Addison—Ramsey-Lane, Atha Drlg. 1. gas

TUSARAWAS COUNTY

Sugar Creek—Sugar Creek Products, Palmer & Geisinger 1 ..... dry

FAIRFIELD COUNTY

Rush Creek—Cora L. Shaw & Co., Ohio Fuel Gas 2-3,307 ..... gas
Geo. O'Hare, Perry Sturm & Co. 2.. dry

Wells completed 2
Dry 1
Gas 1

GUERNSEY COUNTY

Cambridge—Dr. D. A. Craig, Ferguson & McCullough 1 10
Virgil Ross, Gordon Oil 1 ..... gas
Valley—Cambridge Colliers, Ohio Fuel Gas 6-3,357 ..... gas
John Verb, Buffalo Gas 1 ..... gas
Wheeling—John Eailston hrs., Blackstone & Co. 2 20
Westland—P. & H. Kocherha, Kemrow Co. 2 ..... gas
T. & M. Popcum, Kemrow Co. 3 ..... gas

Wells completed 7
Production 30
Gas 5

EASTERN FIELDS

Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	37	95	0	0
Bradford	91	206	0	1
Middle Field	6	7	0	0
Venango-Clarion	23	26	2	1
Butler-Armstrong	5	5	0	1
S. W. Penna.	20	5	5	10
West Virginia	82	104	16	44
S. E. Ohio	78	980	8	16
Total Dec.	342	1,428	31	73
Total Nov.	436	2,546	41	87
Difference	94	1,118	10	14

Summary of Work Under Way

Fields—	Rigs	Drlg.	Total
Allegany	5	26	31
Bradford	24	62	86
Middle Field	0	7	7
Venango-Clarion	2	16	18
Butler-Armstrong	4	17	21
S. W. Penna.	7	17	24
West Virginia	39	116	155
S. E. Ohio	22	94	116
Total Dec.	103	355	458
Total Nov.	115	374	489
Difference	12	19	31

NEW YORK AND NORTHWEST PENNSYLVANIA
WELLS COMPLETED
ALLEGANY FIELD

Forest Oil Corp. 1
Fee, M. Murphy et al 1
Fee, Bradley Producing Corp. 1
Fee, C. M. Robinson et al 1
Milton Oil Co., Milton Oil et al 1
Allen, J. K. Cochran 5
Allen, J. K. Cochran 4
Fee, Bradley Producing Corp. 4
Fee, Bradley Producing Corp. 4
Fee, C. M. Barnes et al 2
South Penn Oil et al, Reeland et al ... 5
Fee, L. Willets estate 5
Fee, Sawnett Oil Corp. 5
Fee, Colegrove Oil 2
Fee, Colegrove Oil 3
Fee, J. M. Hughes et al 2
Fee, Conklin & Reeland 1
Fee, Conklin & Reeland 1
Fee, J. E. LeSuer et al 1
Fee, C. C. Brennan et al 1
Fee, J. W. Johnson et al 1
Fee, Fairview Oil 1
Fee, F. L. Williams 1
Fee, M. J. Crowley 2
Fee, Gilligan & Dermitt 4
Fee, Cuba Nat. Bank 20 2
F. L. Putnam, F. L. Putnam et al ... 2
Fee, Hill, Hughes & Tullar 4
Fee, C. H. Lyons et al 5
Fee, Jacob Meridan et al 5
Fee, N. V. V. Franchot 3
Kinley Oil Co. W. E. & P. W. Burdick . 3
Fee, N. V. V. Franchot 3
Fee, Leland Oil 3
Fee, Leland Oil 3
Kinley Oil Co., Pure Penn Oil, Inc. 2
Culbertson, F. H. Stephan, mgr. trust ... 1

Wells completed 87
Production 95

***BRADFORD FIELD**

Jack, Howard, F. & C. Jack 3
Devlin, Korner Bros. 4
Devlin, B. Devlin 3
Huntington, Evans & Wood 2
Huntington, Evans & Wood 2
Ekas, Dallas Oil 5
Melvin, South Penn (5 wells) 10
Devlin, Penn Bradford Oil 4
Porter, Forest Oil 2
Porter, Forest Oil (4 wells) ..... press
Middaugh, A. L. & L. M. Lilly 2
Fee, E. M. Daly 3
Kenyon, Minich Bros. 3
Irvin, C. E. Patton 3
Irvin, C. E. Patton 3
Howard, Pressure Oil 3
Doubleday, Pressure Oil 2
Russell, Porter & Devore 2
Duke, Gridiron Oil 2
Bingham, J. L. Yerdon 2
Wright, G. McCool et al 3
Fee, Dell J. Moody 1
Potter, Brodick & Stover 3
D. C. & B., C. A. Duke 5
Fee, G. W. Smith estate 8
Campbell, N. V. V. Franchot 5
Rounds, J. W. Kaufman ..... water
Fee, North Branch Oil ..... water
Fee, Curtis & Dunlavey Bros. 1
Fee, Mix Creek Oil 1
Fee, Mix Creek Oil (4 holes) ..... water
Weston, G. C. Rice et al 1
Bell, J. S. Brown 1
Fee, D. M. Hoffman estate 1
Bingham 329, Andrus MacDowell 125 ... 3
Bingham 389, D. W. Daley 58 ..... water
Bingham 386, McKean Co. Trust et al 45 ..... water
Bingham 386, McKean Co. Trust et al, 46 1
Bingham 386, McKean Co. Trust et al, 47 ..... water
Bingham 369, D. W. Daley 70 2
Bingham 291, Howard McCollum 91 ..water
Forest Oil Corp. (3 oil wells) 1
Forest Pet. Corp. (3 oil wells) 1
Forest Pet. Corp. (17 water wells) ...press
Fee, South Penn Oil 2
Fee, Parmeter Bros. 2
E. J. Burns et al, E. Daly 2
Fee, W. E. Piper et al 4
Burns t al, Bliss Oil 1
Clugston et al, Parker Farm Oil 1
Bingham, Asociated Prod. 5
Fee, R. O. Landers et al 2
Fee, Davis Oil Corp. 1
N. V. V. Franchot, DeGolier & Nichols. 2
N. V. V. Franchot, DeGolier & Nichols. 2
N. V. V. Franchot, DeGolier & Nichols. 2
N. V. V. Franchot, Robert Jones 2
N. V. V. Franchot, G. W. Crooks estate. 2
Kinley Oil Co., Dana & Dana 2
Fee, J. A. Walters estate 3
Fee, L. G. Dana 4
Griffith et al, Tanner & Knabb 10
Quintuple, Jane Zane estate 2
Bingham 453, South Penn Oil 2
Bingham 453, Hazelwood Oil 3
Fee, W. C. Kennedy Co. 1
Bingham 450, South Penn Oil 4
Bingham 533, South Penn Oil 4
Bingham 439, South Penn Oil 2
Bingham 499, South Penn Oil 3
Fee, W. C. Kennedy Co. ..... water
Fee, Hazelwood Oil 5
Fee, C. R. Bush et al 3
Bingham 186, Hazelwood Oil 5
Bingham 394, Soph & Wright 4
Bingham 423, South Penn Oil 2
Bingham 576, South Penn Oil 4
Bingham 577, C. P. Byron estate ..... gas
Bingham 410, South Penn 39 1
Bingham 450-474, South Penn 98 1
Bingham 533, South Penn 100 2
Bing-Satt, South Penn 148 2
Bingham 423, South Penn 18 1
Bingham 439, South Penn 118 1
Bingham 450-474, South Penn 99 2
M. E. Smith, South Penn Oil 179 2
Newell tract, South Penn Oil 86 1
Bingham 190-196, South Penn 04 ....press
B. I. Taylor, South Penn Oil 32 1
Tract 27, Hazelwood Oil 146 2
Tract 23, Hazelwood Oil 113 1

Wells completed 91
Production 206
Gas 1
Pressure and water 21

MIDDLE FIELD

McWilliams, Johnson & Nelson 1
Howe, J. H. Howe 12 1
Shamonskey, J. Shamonskey 29 1
Shamonskey, J. Shamonskey 30 1
Lot 109, Clarendon Prod. 22 2
Johnson, Johnson & Myers Bros. 10 ... 1

Wells completed 6
Production 7

VENANGO-CLARION

McKee, Riddle, Covert et al 2 1
Hovis, E. B. Thorn and C. L. Irwin 17 .. 1
Reagle, W. W. Reagle 16 1
Simcox, McKean, Aylesworth 6 3
Drake, W. D. & C. R. Bunney 8 1
Stiles tract 74, S. Y. Ramage 77 1
Stiles tract 74, S. Y. Ramage 78 2
McCalmont, McCalmont 1
McCalmont, McCalmont 1
Milton, S. G. Milton 77 1
Witherup, Franklin Trust 52 1
Foster, Smith & O. C. Nat. Bank 17 ... 1
Splane & Co., Oil City Nat. Bank 38 ... 1
Schwab, J. E. Keverline 4 1
McLaughlin, Thomas McLaughlin 7 ... gas
Call, Z. T. Call 28 1
Clarion—
Hess, H. J. Crawford 5 1
Kiser, F. Youkers 1 ..... dry
Detwiller, Alum Rock Gas 2 3
Mehesten, F. C. Deemer 2 2
Boone, Fogle, Clinger & Kopp 4 1
Edinger, Roy Edinger 3 1
Slicker, H. J. Slicker & Sons 11 ..... dry

Wells completed 23
Production 26
Dry 2
Gas 1

BUTLER-ARMSTRONG

Bredin, Schaffner & Bredin 2 ..... gas
Turner, J. A. Turner 1
Campbell, Mark W. Graham et al 17 ... 2
Barnhart, W. D. McCarrier et al 6 ... 1
Jack, T. C. Burns 6 1

Wells completed 5
Production 5
Gas 1

SOUTHWEST PENNSYLVANIA
WELLS COMPLETED
WASHINGTON COUNTY

Woods, W. C. Lindsay, trustee 1 ..... gas

ALLEGHENY COUNTY

Bordt, Robinson Oil Co. 1 ..... gas
Dieker, Swann & Co. 1 1

BEAVER COUNTY

Keystone Nursery, J. L. Abrams 1 1
Hopman, J. L. Abrams 1 2
Ramsey, Andrews & Co. 6 1

GREENE COUNTY

Fox, Carnegie Gas Co. 1 ..... gas
Long, Jeanette Glass Co. 1 ..... dry
Colw, Mfrs. L. & H. Co. 1 ..... gas
Maple, Ingham & Co. 1 ..... gas
Ingham, Watson, Carnegie Gas Co. 1 ... gas
Price, Carnegie Gas Co. 1 ..... dry
Phillips, Foley & Fox 2 ..... gas
Phillis, C. T. Sutton & Co. 3 ..... gas
Rush, Mfrs. L. & H. Co. 1 ..... dry
Graner, Mfrs. L. & H. Co. 1 ..... dry
Closser, Mfrs. L. & H. Co. 11 ..... gas
Durbin, Mfrs. L. & H. Co. 1 ..... gas

WESTMORELAND COUNTY

Rosia, Phillips G. & O. Co. 1 ..... dry

BUTLER COUNTY

Trees, Trees & Co. 1 ..... gas

Wells completed 20
Production 5
Dry 5
Gas 10

SOUTHEAST OHIO
WELLS COMPLETED
MONROE COUNTY

Hines, Shay & McMullen 1 ..... gas
Bode, H. S. Tribolt 14 20
Fryor, Sylvan Gas Co. 5 2
Draper, Draper Farm Oil Co. 2 10
Stempert, Equable O. & G. Co. 1 2

PERRY COUNTY

McDonald, Allegheny Oil Co. 1 2
Fisher, Marshall & Marshall 13 2
Boyles, Coal Risge Oil Co. 1 ..... gas
Gordon, The Wehrle Co. 1 10
Burley-Winter, Cline & Co. 4 180
Kinnan, Ohio F. G. Co. 1 ..... dry
McKeever, Burley & Leeper 1 10
Moore, Ralph Bros. 1 ..... gas

HOCKING COUNTY

Harden, Strain & Co. 2 5
S. C. C. Co., Preston Oil Co. 29 18
Bradley, Squires & Co. 18 ..... dry
Hartsel, Golden Rod Oil Co. 5 20

GUERNSEY COUNTY

Craig, Craig & Co. 1 10
Rollston, Blackstone & Co. 1 30
Rose, Gordon Oil Co. 1 ..... gas

HOLMES COUNTY

Hanna, Charles Taggenhorst 1 ..... dry
Shellhorn, Ohio F. G. Co. 1 ..... gas
Mullett, Logan Gas Co. 1 ..... gas
Rhode, Ohio Oil Co. 1 50

MUSKINGUM COUNTY

McKnight, Rymilfer Oil Co. 1 50
Burrier, Hope C. & R. Co. 1 30
Varner, Hope C. & R. Co. 2 170

LICKING COUNTY

Hoover Bros., Pure Oil Co. 4 185
Ashcraft, M. F. Whitehill 7 15
Loar, Preston Oil Co. 1 5
Wright, Preston Oil Co. 9 10
Wright, Preston Oil Co. 10 10
Ashcraft, Preston Oil Co. 3 5
Long, G. H. Long 5 1
Farmer, H. C. Farmer 2 1
Davis, A. H. Heisey Co. 3 ..... gas
Hupp, Ohio F. S. Co. 1 ..... gas

KNOX COUNTY

Beatty, Preston Oil Co. 1 1
Howell-Rinehart, Arkansas F. O. Co. 1. 10
Morris, Preston Oil Co. 3 1
Whiting, East Ohio Gas Co. 1 ..... dry

ATHENS COUNTY

Goddard, C. F. Fox 2 ..... dry
C. F. Fox, Kiggins & Co. 1 ..... dry
Harper, Orndoff & Co. 1 ..... gas
Bean, C. F. Fox 2 ..... dry
Bean, C. F. Fox 3 ..... dry
Woodyard, Stout & Co. 1 ..... dry
Searles, Logan Gas Co. 1 ..... dry
States Lands, Athens State Oil Co. 15... 1
Houston, Townsend & Co. 1 ..... gas

NOBLE COUNTY

Davis, L. A. Patton 5 1
Maginnis, M. S. Lee 5 1
McLaughlin, Rich & Co. 10 6
Crum, Cain & Co. 3 1
Crum, Cain & Co. 4 1
Brotton, Sailing & Co. 6 1
Mullet, Cain & Co. 2 ..... gas
Ayers, Spriggs & Co. 1 1
Blair, Ohio F. G. Co. 1 ..... gas

MEIGS COUNTY

Grenner, Sutton Bros. 1 2
Bartels, Batton Oil Co. 1 10
Stobert, Sloane & Co. 1 ..... gas
Hamm, Pure Oil Co. 2 40
Klein, Pure Oil Co. 2 5
Eberst, Tyere & Co. 1 1
Holter, Bowman Run O. Co. 1 1

WASHINGTON COUNTY

Greenwood, Swingle Bros. 1 15
Mendenhall Bros., Mendenhall & Co. 1. 1
Cochrane heirs, Hill Top O. & G. Co. 4 1
Steinhoff, J. C. Grau & Co. 2 5
Nan Wormer, Ernest Gibson 2 1
Watson, Mendenhall & Co. 2 1
Kuhn, Preston Oil Co. 1 1
Schramm, Schramm & Co. 4 2
Edwards, Friendship O. Co. 1 1
Ward, Schramm & Co. 8 6
Secker, T. H. Cisler 5 1

Wells completed 78
Production 950
Dry 4
Gas 10

WEST VIRGINIA
WELLS COMPLETED
LEWIS COUNTY

Jewell, M. M. Smith Co. 1 ..... gas
Cole, Mid Penn Oil Co. 5 ..... gas
Griggs, Moran Bros. 1 ..... gas

HARRISON COUNTY

N. Goff, Jr., N. Goff, Jr. 3 ..... gas
Bartles, Moses & Co. 2 ..... gas
Milton, Harbert Bros. 1 ..... gas

MARION COUNTY

Toothman, Owens B. & M. Co. 1 ..... gas
Yost, So. P. O. Co. 1 ..... gas

WETZEL AND TYLER COUNTIES

Spragg, Annex Oil Co. 1 ..... gas
Carl, Worden & Co. 1 1
Cochran heirs, West Va. Oil Co. 2 20

MARSHALL COUNTY

Williams, Marshall-Preston O. Co. 2 ... gas
Murphy, Mfrs. L. & H. Co. 2 ..... gas

DODDRIDGE COUNTY

Kelley heirs, J. F. Trainer 6 1

RITCHIE COUNTY

Brannon, Pgh. & W. Va. G. Co. 2 ..... gas
Stalnaker, Bish & Co. 1 ..... gas
Daubenspeck, Mid Penn Oil Co. 2 ..... dry
W. Va. Tract, Burk & Co. 17 5
Monroe, Lowe & Co. 1 ..... gas
Wilson, So. P. O. Co. 14 1
Fox-Morgan, Fox & Morgan 3 1
Stanley, Burke Oil Co. 1 1
Baker, O'Dea & Co. 1 1
Wilson, So. P. O. Co. 15 3
Mulnah, Reno Oil Co. 10 7
Jackson, Ed Lynch 1 ..... dry
Bickerstaff, So. P. O. Co. 6 ..... dry
R. M. Tract, So. P. O. Co. 71 10
Haynes, Park Bowser 2 ..... gas

GILMER COUNTY

Ellis, Ellis & Co. 6 1

WIRT COUNTY

Moore, T. L. Anderson 5 ..... dry
Buckner, Liberty Supply Co. 13 ..... dry
Vernon-Donoho, W. C. Patterson 36 ... dry
Rathbone Tract, Roberts Bros. 164 .... dry

WOOD COUNTY

Athey, C. L. Reed 1 ..... dry
Heiron-Rapp heirs, Pil City Tract Co. 5 dry
Marshall, Pleasant Hill Gas Co. 2 .... dry

PLEASANTS COUNTY

Hammett, L. P. Bickel 7 1
Randall, Southern Oil Co. 1 ..... dry
Eddy, Dinsmore & Co. 1 ..... dry

ROANE COUNTY

Stockly, So. P. O. Co. 81 20
Stockly, So. P. O. Co. 83 1
Fair, So. P. O. Co. 1 ..... dry
Hunt, Va. O. & G. Co. 1 10
Graham, U. F. G. Co. 1 ..... gas
Canterbury, Pitt O. & G. Co. 1 1
Perot, Jr., Ohio V. G. Co. 2 1

CALHOUN COUNTY

Pell-Newman, Federal O. & G. Co. 42 .. gas
Stumps, M. F. Crowley 5 ..... gas
Thomas, C. Despard 1 1
Hardman, Jr., Gerwig O. & G. Co. 10 .. gas
Elliott, Virginian G. & O. Co. 1 30
Jarvis, So. P. O. Co. 4 ..... gas
Poling, G. L. Cabot 1 ..... gas
Burrows, W. E. Bickel 1 ..... gas

JACKSON COUNTY

Vandevender, Heck Oil Co. 2 ..... gas
Casto, Parsons O. & G. Co. 1 ..... dry

KANAWHA COUNTY

Summers, Clifton O. & G. Co. 4 1
Painter, Chartiers Oil Co. 1 ..... gas
Jones, Chartiers Oil Co. 1 ..... gas
Thompson, U. F. G. Co. 1 ..... gas
Queen Land Co., U. F. G. Co. 1 ..... gas
King Land Co., U. F. G. Co. 1 ..... gas

LINCOLN COUNTY

Thomas, U. F. G. Co. 1 ..... gas
Adkins, Huntington G. & D. Co. 66 .... gas
Hilbert & Co., U. F. G. Co. 1 ..... gas
H. C. L. & M. Co., U. F. G. Co. 1 ..... gas
H. C. L. & M. Co., U. F. G. Co. 19 ..... gas
Patterson-Toney, U. F. G. Co. 1 ..... gas

PUTNAM COUNTY

Farmer & Shippers, Baker & Osborne 5 gas

MINGO COUNTY

Red Jacket C. & C. Co., Red Jacket O. & G. Co. 4 ..... gas

BOONE COUNTY

L. P. P. Tract A, Pure Oil Co. 34 7
L. P. P. Tract A, Pure Oil Co. 29 1
Williams Coal Co., Pure Oil Co. 246 ... 6
Federal Coal Co., Pure Oil Co. 33 ..... gas
Federal Coal Co., Pure Oil Co. 34 ..... gas
Lenning heirs, Owens B. & M. Co. 5 ... gas

Safe D. T. Co., Owens B. & M. Co. 7 ... gas
Pauley, Owens B. & M. Co. 2 ... gas
Maddox, U. F. G. Co. 1 ... gas

WAYNE COUNTY

Lincoln L. Assn., U. F. G. Co. 1 ... gas
Lincoln L. Assn., U. F. G. Co. 2 ... gas
Osborne, Meahon & Huffman 1 ... gas

Wells completed ... 82
Production ... 104
Dry ... 16
Gas ... 44

LIMA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Wood	2	2	0	0	2	5	7
Hancock	2	50	1	0	0	3	3
Allen	2	30	0	0	0	1	1
Auglaize	1	10	0	0	0	1	1
Van Wert	1	10	0	0	0	0	0
Mercer	1	5	0	0	0	3	3
Seneca	5	0	5	0	0	6	6
Lucas	0	0	0	0	0	1	1
Ottawa	0	0	0	0	0	1	1
Hardin	1	0	0	1	0	1	1
Darke	0	0	0	0	0	1	0
Wyandot	1	0	1	0	0	0	0
Huron	0	0	0	0	0	1	1
Total Dec.	16	107	7	1	2	24	26
Total Nov.	16	204	3	4	7	24	21
Difference	0	97	4	3	5	0	5

WELLS COMPLETED

WOOD COUNTY

Webster—G. L. Daley, Daley Oil 3 ... 1
Perry—J. H. Buckingham, Henderson, Messer & Co. 1 ... 1

Wells completed ... 2
Production ... 2

HANCOCK COUNTY

Pleasants—Ann Henry, Bath Township Oil 1 ... 50
Washington—M. Shaufelberger, J. Hoffmaster 1 ... dry
Allen—E. E. Trout, Oko Oil & Gas 1 .. abd
Mahlon Decker 24, Ohio Oil Co. 30 .. abd
Mahlon Decker 23, Ohio Oil Co. 24 .. abd

Wells completed ... 2
Production ... 50
Abandoned ... 3

ALLEN COUNTY

Bath—C. G. Vore, C. A. Peavy & Co. 2 .. 20
Bassett-Marshall, Neely & Nolden 1 .. 10
Perry—S. Jacobs, Ohio Oil Co. 2, 3 ... abd
John Martin, Ohio Oil 5 ... abd

Wells completed ... 2
Production ... 30
Abandoned ... 3

AUGLAIZE COUNTY

Washington—H. W. Wierwillie, Real Oil 2 ... 10

SANDUSKY COUNTY

Scott—C. J. Overmyer, Ruth H. Beatty & Co. 6, 7 ... abd

VAN WERT COUNTY

Jennings—Jones & Davis, D. S. Bassett 12 ... 10
York—Margaret Hiller, John Elias 1 .. abd
Eli R. Jones, Mac P. Colt & Co. 4 ... abd

Wells completed ... 1
Production ... 10
Abandoned ... 2

MERCER COUNTY

Union—Mary R. Roebuck, Margaret E. Grace 2 ... 5
J. W. Dutton, Stelzer & McClure 1 ... abd
Andrew Coil No. 2, Stelzer & Boyd 1. abd
L. J. Gallman, W. S. Yocum, 1, 2 .... abd
Isaac Slentz, Lynch & Sellers, 4 ..... abd

Wells completed ... 1
Production ... 5
Abandoned ... 5

SENECA COUNTY

Liberty—Leister-Tillotson, J. H. Murphy & Son 4 ... dry
H. Scherger, Tiffin-Columbis Oil 1 .. dry
Frank Lynch, Feasel & Co. 1 ... dry
Hopewell—D. S. King, Robt. Maybier 1 .. dry
Pleasants—S. Smith, Geyer & Shaul, 1 .. dry

Wells completed ... 5
Dry ... 5

LUCAS COUNTY

Oregon—Gertrude J. Niles, Ohio Oil Co. 19 ... abd
Koch-Schmidt, Ohio Oil 7 ... abd
Andrew L. Metzger 6 ... abd

Abandoned ... 6

OTTAWA COUNTY

Clay—F. W. Reideman, R. M. Bell & Co. 1 ... abd
Allen—Ferdinand Riedeman, R. M. Bell & Co. 1 ... abd
F. Simons, B. C. Gibbons 1 ... abd
E. H. Babcock, The Ohio Oil 15 ... abd

Abandoned ... 4

HARDIN COUNTY

Jackson—Aaron McKinley, Kurtz Gas 1 gas

WYANDOT COUNTY

Jackson—Simon Parcell, The Kemrow Co. 1 ... dry

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Clark	0	0	0	0	2	2	2
Cumberland	1	0	1	0	0	0	0
Crawford	4	3	3	0	3	7	10
Lawrence	1	5	0	0	0	0	0
Wabash	4	90	1	0	0	2	2
Marion	1	0	1	0	0	0	0
Macon	1	0	1	0	0	0	0
Madison	1	0	1	0	0	0	0
Shelby	1	0	1	0	0	0	0
Total Dec.	14	98	8	0	3	11	14
Total Nov.	12	71	5	1	3	22	25
Difference	2	27	3	1	0	11	11

WELLS COMPLETED

CUMBERLAND COUNTY

Sumpter—J. Talbot, R. E. Holmes & Co. 1 ... dry

CRAWFORD COUNTY

Oblong—M. C. Stentz, Dinsmoor Oil 3 .. 1
P. Miller, Farnsworth & Co. 2 ... dry
Southwest—C. E. Davis, Phipps, Blosser & Co. 2 ... 2
Prairie—M. J. Fortner, M. Phelan & Co. 6 ... dry

Wells completed ... 4
Production ... 3
Dry ... 2

LAWRENCE COUNTY

Dennison—Wesley Clark, Phipps, Blosser & Co. 5 ... 5
T. P. Gillespie, Ohio Oil 17 ... abd
Bridgeport—L. E. Cummins, Snowden-McSweeney 5 ... abd
Lawrence—D. B. Whittaker, Ohio Oil 1 abd

Wells completed ... 1
Production ... 5
Abandoned ... 3

WABASH COUNTY

Wabash—Tracy Heirs, Tracy Heirs Oil 4 ... 50
J. M. Mullinax, Highland Oil 2 ... 20
Lucy Courter, J. D. Toomey & Co. 17 20
John Compton, J. S. Young, Jr. & Co. 1 dry
Friendsville—C. R. Schrader, G. W. Miller & Co. 1 ... abd
J. T. Smith, Arkansas Fuel Oil 1 .... abd
S. H. Price, H. Skidmore & Co. 1 .... abd

Wells completed ... 4
Production ... 90
Dry ... 1
Abandoned ... 3

MARION COUNTY

Haines—Sam Finn, Benoist-Finn Oil 1 .. dry

MACON COUNTY

Hickory Point—A. Parish, Powers & Co. 1 ... dry

MADISON COUNTY

Pine Oak—Unknown, Assembly Oil & Gas 1 ... dry

SHELBY COUNTY

Holland—Unknown, Ginter & Co. 1 .... dry

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Jay	1	20	0	0	0	1	1
Adams	0	0	0	0	1	0	1
Gibson	5	30	3	1	1	6	7
Pike	3	10	2	0	0	0	0
Daviess	4	0	0	0	0	2	2
Sullivan	3	24	0	0	0	4	4
Vigo	1	30	0	0	0	1	1
Grant	0	0	0	0	0	1	1
Huntington	0	0	0	0	0	1	1
Wells	0	0	0	0	0	1	1
Spencer	3	25	2	0	1	9	10
Dubois	0	0	0	0	0	2	2
Knox	0	0	0	0	0	1	1
Benton	0	0	0	0	0	1	1
Fountain	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	1	1
Bartholomew	0	0	0	0	0	1	1
Miami	0	0	0	0	0	1	1
Montgomery	0	0	0	0	0	1	1
Wabash	0	0	0	0	0	1	1
Greene	0	0	0	0	0	3	3
Henry	0	0	0	0	0	1	1
Crawford	1	0	1	0	0	1	1
Perry	0	0	0	0	0	1	1
Posey	0	0	0	0	0	1	1
Vandeburg	0	0	0	0	0	2	2
Steuben	1	0	0	0	0	0	0
Lagrange	0	0	0	0	0	1	1
Hancock	0	0	0	0	0	1	1
Rush	1	0	0	1	0	0	0
Total Dec.	19	154	8	2	4	47	51
Total Nov.	16	101	5	5	5	58	63
Difference	3	53	3	3	1	11	12

WELLS COMPLETED

JAY COUNTY

Penn—L. Grissell, Amber Oil Prod. 30, 33, 34 ... abd
J. M. Sutton, Amber Oil Prod. 15 .. abd
L. P. Grissell, L. F. Grissell 1, 2, 3 .... abd
Near Red Key—Oscar Current, Dee Wesner 1 ... 20

Wells completed ... 1
Production ... 20
Abandoned ... 7

GIBSON COUNTY

Washington—Frank Thompson, Wm. Bell & Co. 3 ... 30
Rudolph Nixon, Wm. Bell & Co. 1 .. dry
Barton—S. M. & W. S. Ferris, Gem Oil Corp. 2 ... gas
Center—Ranford Corn, Roxana Pet. 2 .. dry
F. Wilderman, Joe S. Young Jr. & Co. 3 ... dry

Wells completed ... 5
Production ... 30
Dry ... 3
Gas ... 1

PIKE COUNTY

Logan—Fannie Fowler, H. C. Darby & Co. 1 ... 10
A. Atkinson, Perry S. Andrews 9 .... dry
Olive Branch Church, Roger Kirkwood & Co. 1 ... abd
Madison—J. O. Smith, Murphy Oil 1 ... abd
J. P. Runtel, Murphy Oil 2 ... abd
Lockhart—Willehellima Martin, Hoosier Drilling 1 ... dry

Wells completed ... 3
Production ... 10
Dry ... 2
Abandoned ... 3

SULLIVAN COUNTY

Fairbanks—C. W. Scott, Chas. W. Scott & Co. 2 ... 20
J. T. Mayfield, Wyman & Brown 2 .. 10
Turman—W. W. Harris, Bollinger & Co. 5 ... 4

Wells completed ... 3
Production ... 34

VIGO COUNTY

Prairie Creek—Lennie Thomas, Sioni Oil Corp. 1 ... 30

RANDOLPH COUNTY

Monroe—R. B. Cockrell, Tharp & DeMoss 1 ... abd
F. E. Keever, Tharp & DeMoss 2, 3, 4 abd

Abandoned ... 4

HUNTINGTON COUNTY

Salamonie—Frank Malott, Norchester Oil 1 ... abd
Calvin Perdue, Norchester Oil 1 .... abd
J. L. Priddy, Norchester Oil 1 .... abd
A. E. Harper, H. B. Wood, 1, 2 .... abd
Keller, H. B. Wood 1 ... abd
Jones, H. B. Wood 1 ... abd
Tucker-Miller, H. B. Wood 1, 2 .... abd
King Lodge, H. B. Wood 1, 2, 3, 4.. abd
Amos Schwab, Butler Oil-March Petroleum 1, 2, 4 ... abd
DeHaven-Neuman, T. O. Darrow 1 .... abd

Abandoned ... 17

SPENCER COUNTY

Near Troy—Cord Dooley, Wiser Oil 1.. dry
Arthur Ray, Packard Oil 1 ... 25
Huff—Fred Butler, Wood Oil, Inc., 1.. dry

Wells completed ... 3
Production ... 25
Dry ... 2

CRAWFORD COUNTY

Johnson—D. W. Jones, Henderson Bros. 1 ... dry

STEUBEN COUNTY

Steuben—Peter Snowberger, B. O. Reynolds 1 ... 5

RUSH COUNTY

Rushville—East of Carthage, Rushville Gas 1 ... gas

MICHIGAN FIELDS

Summary of Field Operations

Muskegon County

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Muskegon	27	2,870	4	4	51	45	96
Isabelle	3	365	0	0	0	3	3
Midland	0	0	0	0	0	2	2
Shiawassee	0	0	0	0	0	1	1
Newyago	0	0	0	0	1	2	3
Crawford	0	0	0	0	0	1	1
Montcalm	0	0	0	0	1	0	1
Sanilac	0	0	0	0	0	1	1
St. Clair	0	0	0	0	0	4	4
Van Buren	0	0	0	0	2	1	3
Alpena	0	0	0	0	0	1	1
Livingston	0	0	0	0	0	2	2
Allegan	0	0	0	0	1	0	1
Tuscola	0	0	0	0	0	1	1
Mason	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Manistee	0	0	0	0	1	0	1
Cass	0	0	0	0	0	1	1
Mecosta	0	0	0	0	1	0	1
Kent	0	0	0	0	2	1	3
Ottawa	1	0	1	0	0	3	3
Oceana	0	0	0	0	1	3	4
Total Dec.	31	3,235	5	4	61	74	135
Total Nov.	27	9,100	3	3	56	89	145
Difference	4	5,865	2	1	5	15	10

WELLS COMPLETED

MUSKEGON COUNTY

Muskegon—Figge, Dixie Oil 10 ... 50
Hill, Reed Oil 1 ... 100
Van Allsburg, Johnson Oil & Ref. 1.. 140
Shoup, Shoup Oil 3 ... gas
Herman Heinz, Muskegon Oil Corp. 4 50
Reeths, Paramount Oil 1 ... 115
Danilloff, Tri Angle Oil 1 ... 100
Giles, Puritan-Goldboss 1 ... 350
Fagan, Brien & Brien 1 ... 100
Curtis, Northern Oil & Gas 1 ... dry
Myler, Muskegon Development 2 ... gas
Fee, Continental Motors Corp. 4 ... 30
Albert Damm, Eagle Oil Corp. 1 ... dry
Taggart, A. S. Cochran 2 ... 350
T. S. Collins, Victor Oil & Gas 1 ... 50
C. Cooley, Lake State Oil & Gas 1 .. gas
Cooper, United Oil & Gas 1 ... 50
Dronst, Meesike Development 2 ... 100
Plunkett, Consolidated Oil 1 ... gas
Joldersa, Central Oil & Gas 1 ... 35
Overkamp, Puritan Oil 1 ... 600
L. Heinz, Muskegon Dev. Mid-West Petroleum 1 ... 200
Laketon—H. Shuler, Maire-Caswell-Kidder 1 ... 250
Adams, Johnson Oil & Refg. 1 ... dry
Savacool, Johnson Oil & Refg. 1 ... dry
A. H. Fenner, Bark & Pack 1 ... 100
G. VanLoo, Buckeye Oil & Gas 1 ... 100

Wells completed ... 27
Production ... 2870
Dry ... 4
Gas ... 4

ISABELLE COUNTY

Chippewa—John B. Raynor, The Pure Oil 1 ... 145
Geo. Lilly, The Pure Oil ... 70
Section 12, Chippewa Oil Synd. 1 150

Wells completed ... 3
Production ... 365

OTTAWA COUNTY

Spring Lake—Ed. Voss, Spring Lake Oil Synd. 1 ... dry

BOOKLET ON KANSAS

An interesting publication entitled "Oil and Gas Resources of Kansas in 1927," by L. K. Kesler has been distributed. It is exceptionally well written and contains a wealth of information regarding districts of Kansas which have been given slight attention in the contemporary oil and gas literature of the State. Mr. Kesler, the author, is resident geologist for the Sinclair Oil & Gas Co. in Kansas and was former president of the Kansas Geological Society. The booklet is published by the State Geological Survey of Kansas.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for November

Runs

Company	Month bbls.	Dly. av. bbls.
*Prairie P. L. Co.	4,500,000	150,000
Gulf P. L. Co.	1,471,222	49,041
Texas P. L. Co.	884,473	29,482
Magnolia P. L. Co.	2,120,315	70,677
Empire P. L. Co.	1,236,637	41,221
Cosden P. L. Co.	879,810	29,327
Sinclair P. L. Co.	3,210,000	107,000
Oklahoma P. L. Co.	3,130,325	104,344
Other lines	7,620,000	254,000
Total November	25,052,782	835,092
Total October	26,499,940	854,835
Difference	1,447,158	19,743

Shipments

†Prairie P. L. Co.	5,461,567	182,052
Gulf P. L. Co.	1,594,937	53,165
Texas P. L. Co.	1,111,436	37,048
Magnolia Pet. Co.	1,995,306	66,510
Empire P. L. Co.	1,035,169	34,506
Cosden P. L. Co.	874,967	29,162
†Sinclair P. L. Co.	3,211,711	107,057
Oklahoma P. L. Co.	3,174,464	105,815
Other lines	7,350,000	245,000
Total November	25,809,577	860,315
Total October	27,333,903	881,735
Difference	1,524,326	21,420

Stocks

	Bbls.
Prairie O. & G. Co.	31,837,000
Prairie P. L. Co.	2,750,000
Gulf P. L. and Gypsy Oil Cos.	10,112,313
The Texas Company	6,762,931
Magnolia Pet. Co.	9,265,632
Empire P. L. Co.	3,575,959
Mid-Continent Pet. Corp.	3,593,914
Sinclair Crude Oil Pur. Co.	20,623,000
Carter Oil Co.	12,128,602
Oklahoma P. L. Co.	3,875,959
Other lines	11,700,000
Total November	116,225,310
Total October	115,173,801
Difference	1,051,509

*Estimated. †Prairie P. L. and Sinclair P. L. shipments include Texas crude oil.

Note—Stocks do not include approximately 8,200,000 bbls. of crude oil held in storage on private tank farms and leases and approximately 210,000 bbls. of Texas Panhandle crude oil in storage in Oklahoma.

EASTERN PIPE LINE REPORT

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct.'28	Nov.'28
Nat. Transit	172,463.66	149,632.58
S. W. Pa. P. L.	94,478.66	85,351.54
Eureka P. L.	400,805.98	340,150.08
Buckeye P. L. (Macksburg)	363,769.46	324,323.38
Buckeye P. L. (Cleveland)	13,134.12	9,969.20
Buckeye P. L. (Lima, etc.)	119,271.80	95,741.92
Indiana P. L.	7,592.34	5,045.26
Cumberland P. L.	217,927.04	200,252.82
N. Y. Transit	26,945.74	26,096.56
Tidewater P. L.	223,123.30	213,822.88
Pure Oil	64,772.84	63,222.62
Emery P. L.	62,569.80	59,915.74
Paragon Dev.	24,640.17	21,545.52
Stoll Oil Ref.	9,609.59	8,888.44
Total	1,800,994.50	1,606,958.54
Daily average	58,099.79	53,565.15

Note—Indian Refining Co. also reported other receipts of 367,515.15 bbls. Paragon Refining Co. had other receipts of 159,377.75 bbls. Paragon Development had other receipts of 479.18 bbls.

Petroleum Deliveries

The following table exhibits the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, Wst Virginia, Ohio, Kentucky at the close of October and November:

	Oct.'28	Nov.'28
Nat. Transit	528,778.26	581,552.73
S. W. Pa. P. L.	491,708.37	453,348.05
Eureka P. L.	228,824.47	233,597.31
Buckeye P. L. (Macksburg)	139,624.01	104,175.67
Buckeye P. L. (Cleveland)	2,425.85	1,942.42
Buckeye P. L. (Lima, etc.)	1,424,886.12	1,432,776.49
Indiana P. L.	1,426,003.87	1,380,185.20
Cumberland P. L.	221,498.45	182,624.70
N. Y. Transit	278,273.65	232,023.71
Northern P. L.	130,832.45	240,489.16
Tidewater P. L.	183,550.90	181,613.37
Pure Oil	109,074.40	63,566.49
Emery P. L.	59,853.71	59,688.23
Paragon Ref.	203,968.74	159,377.75
Paragon Dev.	26,688.69	.....
Total	5,455,991.94	5,306,941.28
Daily average	175,999.74	176,898.04

Indian Refining Co. reported other deliveries of 292,984.68 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky for October and November:

	Oct.'28	Nov.'28
Nat. Transit	971,530.85	937,788.09
S. W. Pa. P. L.	674,433.72	548,202.29
Eureka P. L.	1,049,306.93	1,119,157.14
Buckeye P. L. (Macksburg)	496,344.46	565,202.83
Buckeye P. L. (Cleveland)	41,437.01	29,807.45
Buckeye P. L. (Lima, etc.)	3,428,238.49	2,745,636.88
Indiana P. L.	591,505.91	542,471.12
Cumberland P. L.	504,787.65	520,634.29
Southern P. L.	433,685.28	374,083.37
N. Y. Transit	494,456.24	403,009.35
Northern P. L.	429,822.34	381,904.17
Pure Oil	14,039.00	14,711.72
Emery P. L.	11,502.07	12,163.12
Paragon Ref.	15,313.80	22,875.49
Indian Ref.	66,957.25	142,492.29
Paragon Dev.	6,347.21	6,413.78
Total	9,229,709.11	8,366,553.38
Decrease	431,201.23	863,155.73

Grades of Oil

The following table shows the amount of the different grades of oil held by the east-pipe lines at the close of October and November, showing the gross stocks of the above fields:

	Oct.'28	Nov.'28
Pennsylvania	3,121,156.66	3,045,588.44
Lima	977,037.03	793,424.06
Kentucky	799,724.03	767,197.74
Mid-Continent	4,278,220.12	3,605,501.13
Illinois	53,571.27	154,842.01
Total	9,229,709.11	8,366,553.38

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1925	1926	1927	1928
Jan.	56,831	55,630	56,209	52,904
Feb.	60,606	60,394	61,298	57,002
Mar.	60,575	61,644	63,247	57,485
April	63,062	63,019	60,337	56,813
May	59,217	60,580	60,284	62,067
June	61,270	61,131	62,757	58,220
July	62,639	63,206	58,674	57,144
Aug.	59,686	61,815	60,870	57,745
Sept.	62,510	64,639	60,285	53,487
Oct.	145,388	161,132	147,030	58,100
Nov.	59,350	61,774	57,275	53,565
Dec.	57,974	58,755	53,089	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1925	1926	1927	1928
Jan.	157,889	155,056	141,227	146,465
Feb.	160,863	159,488	138,534	167,368
Mar.	154,591	150,239	133,777	158,882
April	151,429	152,371	140,227	172,935
May	146,995	160,998	144,594	180,559
June	149,467	160,257	149,772	188,034
July	161,338	160,045	151,850	189,470
Aug.	161,730	151,939	188,653	192,853
Sept.	156,719	158,915	144,213	194,138
Oct.	145,388	161,132	147,036	176,000
Nov.	143,582	152,608	150,975	176,898
Dec.	150,162	136,428	144,504	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1926	1927	1928
Jan.	9,859,170	9,718,008	12,276,710
Feb.	9,579,354	10,119,162	12,180,410
Mar.	9,438,292	10,794,044	12,230,720
April	9,805,851	11,112,295	11,740,135
May	9,531,757	11,359,381	11,602,468
June	9,585,904	11,493,673	11,387,672
July	9,734,687	11,458,128	10,810,331
Aug.	9,058,947	11,989,115	10,286,748
Sept.	9,436,732	12,212,716	9,660,910
Oct.	9,269,806	12,047,661	9,229,709
Nov.	9,257,067	11,939,740	8,366,553
Dec.	9,454,512	12,340,297	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Runs	Shipments	Stocks
1927—			
Nov.	2,746.50	2,220.53	21,473.56
Dec.	2,779.86	1,893.69	22,359.72
1928—			
Jan.	1,886.06	2,424.79	21,810.99
Feb.	2,460.14	3,109.34	21,170.79
Mar.	2,573.86	3,540.33	20,200.32
June	3,153.08	2,779.02	17,922.58
July	2,902.50	3,628.02	17,197.06
Aug.	2,874.11	2,350.13	17,721.04
Sept.	2,820.31	5,255.42	15,286.93
Oct.	1,289.93	538.59	17,561.93
Nov.	2,663.53	788.47	19,436.99

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Dec.1	2,069,949.26
Runs from wells	649,844.44
Other receipts	475,152.22
Regular deliveries	628,747.69
Other deliveries	440,266.44

The amount of Illinois oil run by the Tidewater Pipe Co. in November was 26,488.44 bbls. Deliveries were 73,842.24 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1927—		
November	605,621.14	415,186.06
December	577,321.25	397,176.07
1928—		
January	561,759.57	434,147.03
February	573,619.78	450,217.51
March	726,250.82	520,696.09
April	526,013.13	448,232.44
May	632,968.64	522,930.51
June	608,552.49	625,087.33
July	612,286.49	565,678.37
August	639,074.85	671,864.03
September	570,307.91	737,293.59
October	626,147.64	626,290.40
November	576,332.38	702,589.93

Tidewater Pipe Co., Ltd., also delivered in September 261,905.21 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans	Port Arthur	Baton Rouge	Sabine Pass	Tampa	Total	Total all ports
June	11,800	.....	23,367	19,700	9,000	63,567	.....	.....		.....	.....	.....	.....	63,567
July	19,807	2,903	8,774	20,419	2,452	54,355	.....	.....		.....	.....	.....	.....	54,355
August	18,161	3,613	27,774	17,677	2,419	69 645	.....	.....		.....	.....	806	70,451	
September	11,100	.....	18,967	38,200	6,700	74,967	.....	.....		.....	.....	.....	.....	74,967
October	17,323	.....	11,807	6,483	.....	.....	.....	.....		.....	.....	.....	.....	35,613
November	21,333	5,200	25,400	18,200	7,100	77,233	.....	.....		.....	.....	1,000	78,233	

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans	Port Arthur	Baton Rouge	Sabine Pass	Tampa	Total	Total all ports
June	24,900	12,233	119,867	41,667	19,300	217,967	1,833	15,567		2,167	.....	.....	19,567	237,534
July	23,484	14,548	111,903	37,678	21,452	209,065	9,355	25,000		.....	774	35,129		244,194
August	25,290	16,323	123,226	21,613	7,194	193,645	.....	38,677		.....	613	39,290		232,935
September	22,933	19,100	110,467	30,700	14,333	197,533	6,367	41,300		6,333	1,667	55,667		253,200
October	20,161	16,839	128,452	27,710	7,098	200,258	.....	32,226		3,065	1,612	36,903		237,161
November	18,400	16,033	133,700	30,267	8,433	206,833	1,333	37,167		4,633	.....	43,133		249,966

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS

(In barrels of 42 gallons.)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
December:	Month	18,938,323	22,208,417	19,840,000	3,427,174	2,962,750	1,927,148	2,400,578	3,219,900	74,924,799
	Daily average	610,930	716,400	640,000	110,554	95,576	62,166	77,438	103,868	2,416,926
January:	Month	19,028,228	20,978,320	20,024,981	3,319,325	2,791,922	1,805,015	2,429,375	3,133,000	73,510,166
	Daily average	613,814	676,720	645,967	107,075	90,061	58,226	78,367	101,064	2,371,296
February:	Month	18,038,459	19,294,426	19,645,488	3,079,887	2,571,575	1,759,606	2,230,887	3,166,000	69,786,328
	Daily average	622,016	665,324	677,431	106,203	88,675	60,676	76,927	109,173	2,406,425
March:	Month	19,118,320	20,162,524	21,466,632	3,379,031	2,687,948	1,871,158	2,401,911	3,522,000	74,609,524
	Daily average	616,720	650,404	692,472	109,001	86,708	60,360	77,481	113,613	2,406,759
April:	Month	18,280,729	19,096,920	21,845,428	3,412,260	2,472,600	1,915,020	2,370,810	3,231,000	72,624,767
	Daily average	609,357	636,564	728,180	113,742	82,420	63,835	79,027	107,700	2,420,526
May:	Month	19,331,866	19,443,355	21,191,561	3,367,809	2,843,847	1,926,036	2,525,043	3,619,000	74,248,517
	Daily average	623,609	627,205	683,599	108,639	91,737	62,130	81,458	116,742	2,395,113
June:	Month	19,164,244	18,482,981	19,802,520	3,202,050	3,075,911	2,112,149	2,425,470	3,394,000	71,655,325
	Daily average	638,808	616,099	660,084	106,735	102,530	70,405	80,849	113,133	2,388,644
July:	Month	19,764,458	18,809,498	22,155,335	3,171,648	2,792,139	2,237,738	2,492,586	3,472,000	74,895,302
	Daily average	637,241	606,758	714,688	102,308	90,069	72,185	80,406	112,000	2,415,655
August:	Month	19,444,849	20,840,494	22,201,257	3,147,068	2,711,787	2,221,677	2,561,840	3,571,200	76,700,212
	Daily average	627,255	672,274	716,170	101,518	87,477	71,667	82,640	115,200	2,474,200
September:	Month	18,908,169	22,456,860	21,554,260	3,047,250	2,540,070	1,829,625	2,432,430	3,420,000	76,188,664
	Daily average	630,272	748,562	718,475	101,575	84,669	60,987	81,081	114,000	2,539,621
October:	Month	19,430,992	23,431,071	21,522,029	3,058,660	2,652,484	1,836,192	2,571,822	3,612,000	78,115,350
	Daily average	626,806	755,841	694,259	98,660	85,564	59,232	82,962	116,516	2,519,849
November:	Month	19,907,520	22,078,680	20,813,230	2,976,840	2,476,080	1,785,090	2,388,390	3,255,000	75,650,850
	Daily average	663,584	735,956	693,770	99,228	82,536	59,503	79,613	108,500	2,521,694
	Total 12 months	229,316,707	247,283,546	252,062,730	38,588,892	32,579,113	23,226,456	29,231,142	40,615,100	892,903,686
	Daily average	626,548	675,638	688,696	105,434	89,014	63,460	79,866	110,973	2,439,628